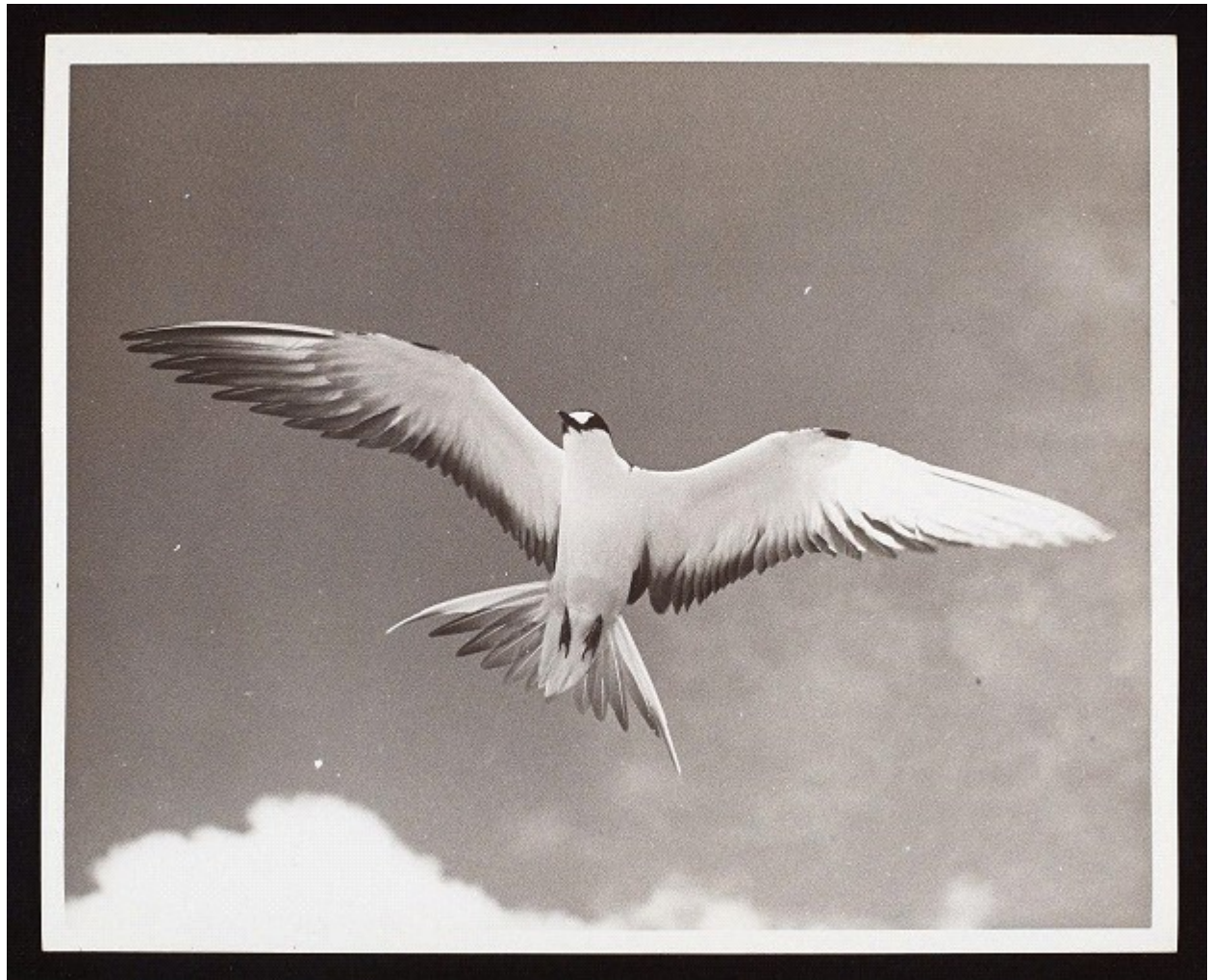


# NON-FICTION - APRIL 2024



*Sooty Tern, Sand-Johnson Island, 1965*  
National Museum of Natural History (U.S.)  
Pacific Ocean Biological Survey Program

## **ONYCHOPRION FULIGINOSUS:**

Sooty Tern.  
from *The Birds of Australia*, 1854

Noddy, Damp. Voy., vol. iii. part i. p. 142. pl. in p. 123. fig. 5.4 Hawkesb. Voy., vol. iii. p. 652.

*Sterna serrata*, Forst. Draw., t. 110.

*guttata*, Forst.

*Oahuensis*, Bloxam.

*Onychoprion serratus*, Wagl. 4G. R. Gray, List of Gen. of Birds, 2nd edit., p. 100.

Auruoueu I retain the term *fuliginosus* for this bird, which exhibits some trivial differences from the species

so called inhabiting the northern hemisphere, I have reasons for considering it to be distinct, and that, as in many other instances, the two birds are representatives of each other ; and I think we are the more bound to consider them to be so, when we find that the incubation of these birds in the two hemispheres takes place at opposite periods; Mr. Gilbert found this bird breeding on the Houtman's Abrolhos, off the western coast of Australia, in the month of December, while M. Audubon found the fuliginosus breeding on the Tortugas, in North America, in May.

Mr. Gilbert states, that it lays a single egg on the bare ground beneath the thick scrub; and that the egg varies considerably in colour. The breeding-season is at its height in December, but a few may be found performing the task of incubation in January. So reluctant is it to leave its egg or young, that it will suffer itself to be taken by hand rather than desert them. For several weeks after the young are able to fly, this bird may be seen in vast flocks soaring at a great height. It is an extremely noisy species, and may be heard on the wing during all hours of the night.=

The ground colour of the eggs is a creamy white, in some very pale, in others very rich, blotched all over with irregular-sized markings of chestnut and dark brown, the latter hue appearing as if beneath the surface ; the lighter-coloured eggs have these markings much smaller and more thinly dispersed, except at the larger end ; they are two inches and an eighth long by one inch and a half in breadth. Lores, crown of the head and back of the neck deep black ; all the upper surface, wings and tail deep sooty black; the apical half, the shaft and the outer web of the lateral tail-feathers white ; a V-shaped mark on the forehead and all the under surface of the wings and body white, passing into grey on the lower part of the abdomen and under tail-coverts; irides dark brown; bill black; feet brownish black. The young have the entire plumage of a sooty brown, with a bar of white at the tip of each of the feathers of the back, wings and upper tail-coverts.

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## **The Scouring of the White Horse Country**

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Exploring a seemingly sudden widespread disaffection with chalk horses in the nineteenth century, this paper traces elements of identity imposed on hill figures that represented region and nation for centuries prior to the comparatively

recent adoption of prehistoric remains as national heritage. It questions long-held suggestions of a seven-year restoration cycle and the role of manorial lords, and examines the belief that those white horses created in a period starting in the late eighteenth-century were primarily motivated by the fashion for follies and horse painting.

*For the White Horse knew England,  
When there was none to know. . .*  
G.K. Chesterton, *Ballad of the White Horse*, 1911.

## INTRODUCTION

Hill figures, sometimes referred to as turf monuments, are large subterranean shapes that have been carved into the side of a hill. The turf layer is removed in the outline of a horse or other figure, and the excavated area is then backfilled with compacted chalk. The figures can be seen from a distance, but they do become overgrown and can in time disappear, so regular restoration is required in order to maintain them. Traditionally this refurbishment consists of weeding and replenishing the chalk with a renewal of the figure's outline, and is known as 'scouring'.

The oldest known hill figure is the Uffington White Horse, which having been created by trenches being cut and backfilled with chalk at some point between 1400 and 550 BC, has survived nature's unceasing determination to overgrow it for 3,000 years. The remarkable survival of this hill figure is seemingly due to regular scouring over several millennia, which in recent centuries was traditionally executed at intervals often cited as around every seven years. In view of this extraordinarily long-held custom it is particularly surprising that in 1880, when producing his paper on the "The White Horses of Wiltshire", the Revd. Plenderleath noted only in passing that the traditional celebratory maintenance of the Uffington horse had ceased in 1857. He reported:

*... since which time they have ceased, and the figure is NOW so overgrown with weeds as scarcely to be discernable from a distance, except by a person who knows where to look for it.*

Plenderleath's passive understatement belies the sudden unexplained termination of this extraordinarily long held landscape movement. The ancient custom of regularly restoring Uffington White Horse in celebratory fashion was so popular over the century prior to 1857, that the chalk hills of Wiltshire are today characterised by imitations spawned during this period. The effort involved in the creation and regular maintenance of these sites is testimony to the tremendous enthusiasm for hill figures at numerous locations across the region and much further beyond. Scouring at Uffington ceased, therefore, at a time when the popularity of white horse hill figures had seemingly been at a national high for three-quarters of a century.

This broad based national enthusiasm for chalk horses appears to have taken off in 1778, when a rustic chalk 'horse' figure at Westbury' was re-carved into a more realistic looking steed. A similarly shaped figure appeared at Cherhill in 1780, and another at Pewsey in 1785. Other white horse hill figures appeared outside the county, one appearing at Mormond Hill in Scotland around 1795 or perhaps earlier, and a horse with a rider appeared near Weymouth the following decade.<sup>o</sup> Back in Wiltshire the Marlborough horse appeared in 1804, then Alton Barnes Horse was carved in 1812, following which the Hackpen Horse appeared at Broad Hinton in 1838, with another appearing at Litlington in Sussex in the same year, and then the Devizes 'Snob' Horse was cut by shoemakers in 1845. Chalk horses were also cut at Rockley, near Marlborough, and another just across the Wiltshire border at Woolbury in Hampshire.' The end of this popular movement appears to centre on the last scouring festival at Uffington in 1857, yet even this final occasion inspired the horse at Kilburn (North Yorkshire) to be cut later the same year.

Although two other horses appeared after 1857,

at Broad Town c.1864 or earlier,' and Inkpen c.1868, these rather endorse the 1857 scouring at Uffington as a watershed in hill figure management.' The Inkpen Horse was not maintained and soon disappeared, and the Broad Town horse was described soon after as in need of improving by the owner William Simmonds who was not sufficiently motivated to carry this through.' Whatever induced this lack of enthusiasm and brought about the end of scouring at Uffington, it had also brought about the end of scouring elsewhere.

Following the cutting of Marlborough White Horse in 1804 by pupils of the High Street Academy, scouring with revels took place every year for approximately 30 years but halted upon the headmaster's death. The final scouring of Westbury White Horse took place in 1853, and in 1856, the year prior to the final scouring at Uffington, a final scouring took place at Alton Barnes.!! Scouring was also halted at the hill figures of Tysoe, Whiteleaf, and Cerne Abbas which, along with Westbury, are cited as holding festivals in association with the scouring, similar to the practice at Uffington. The sudden unexplained termination of scouring at Uffington in 1857 was typical of all these sites, and seemingly marked the end of a tremendously popular national enthusiasm.

That the cessation of scouring was a result of sudden irremediable disaffection with these hill figures, is evident. With so many of the Wiltshire horses being close together their relative states would surely have prompted comparison, their fading condition would be witnessed on a daily basis by those working in the fields and regularly noticed by parishioners emerging from services, as many hill figures could be seen from a church." Where some motivational factor such as local pride had previously encouraged regular maintenance, however, the deterioration and loss of these figures failed to instigate the scouring of survivors. After 1857 all the hill figures tended towards neglect, and as a consequence numerous horses quickly disappeared including those at Rockley, Litlington, and Woolbury.'? The horse figures were ignored to the

extent that there is no contemporary commentary on their decline during the ensuing decade, so it is impossible to state how many disappeared during this period, although it appears to have totalled around ten. A number of new chalk figures were carved during the twentieth century, but the total known to have disappeared to date now stands at sixty.' This estrangement is in somewhat sharp contrast to the evident enthusiasm behind the hill figure movement in previous times.

## CROSS PURPOSES

Following the Reformation, a Saxon ancestry free of any influence from Rome was increasingly asserted by the Church of England in order to establish a historic origin for the English church. Scholarships in Anglo-Saxon were founded through the universities, and the process of familiarising with Anglo-Saxon language and literature led to transcribed and disseminated texts that benefited scholars. Among them was Richard Verstegan, who in entering Oxford as a Catholic knew his religious adherence would see him fail to gain his degree. Verstegan's studies, however, resulted in the publication of *A Restitution of decayed intelligence, in antiquities concerning the most noble, and renowned English nation* (Antwerp 1605, London 1653), which included an illustration of the Germanic leaders first described by the Venerable Bede (673-735) as landing in Kent in 449. Whilst more extensive accounts followed Bede's in the *Anglo-Saxon Chronicle* and *Historia Brittonum*, there had never been such an instant and vivid portrayal of the Saxon landing as Verstegan's illustration of the arrival of Hengist and Horsa complete with banner displaying a white horse (Fig. 1) Accompanying the illustration of the white horse are imaginative copper engravings of Saxon gods of unprecedented design, together with other descriptions and images from which numerous emblems and symbols appear to have developed, including the county symbols of Essex and Middlesex in addition of course to the white horse of Kent (Fig. 2). Although acknowledged by these

counties, Verstegan's influence remains seemingly unrecognised further west in England beyond the early half of the seventeenth century, when his imaginative imagery was readily absorbed through the absence of any contemporary sense of national ancestry to rival the historically popular perceived past born of Geoffrey of Monmouth and the Brut Chronicles.""

Sold from a stall in St Paul's churchyard and influentially appearing in the same year as Camden's Remains: Concerning Britain (1605)' and the discovery of the Gunpowder Plot, Verstegan's Restitution promoted the Saxons as enhancers of indigenous culture. He not only argued that the Saxons were the formative influence of the English nation, but that the English were descended from the Germanic Saxons and were totally unrelated to the British. The strength of this belief was such that an identity developed embracing Danes and Saxons alike as Gothic, and a century later the Britons became defined through Edward Lhuyd's Archaeologia Britannica (1707) as Celts. The notion of the Saxons being at the root of English culture and ancestry was further popularised through such as Philemon Holland's English translation of William Camden's Britannia (1610), successive editions of which had included increasingly enlarged sections on Anglo-Saxon history, promoting an image of England as a nation founded on a language and religion emanating from a Saxon system of churches and monasteries. This topographical survey of antiquities contributed, as Edwin Jones has stated, 'much to the English sense of national identity in the sixteenth century'."" This Saxon identity was furthered by John Weever's Ancient Funeral Monuments (1631) which, in addition to reminding the church that it was a repository of social history, defended the historic founding of abbeys and priories. This prepared the ground for the developing interest in monasteries and monastic history later in the century by such as Sir William Dugdale, Thomas Tanner, Roger Dodsworth, and Henry Wharton. With the emphasis stressing a Saxon heritage having been replenished in 1649, when the head of the church was lost through the regicide of

Charles I, Saxon scholarship flourished in Oxford University in the last half of the seventeenth century, much promoted through the enthusiasm of individuals encouraged by competition with Cambridge and the establishment of a lectureship in Saxon studies. The main corpus of Anglo-Saxon literature was made accessible in this period, and by the end of the century the works of Gildas, Nennius, and Asser had been edited, as had the Anglo-Saxon Chronicle, and Bede's Ecclesiastical History, which of course was purposely written in accessible language in the knowledge that this was how the rapid spread of Christianity had been facilitated."! Bede, who had written of Augustine bringing Christianity to England, was considered papist, however, and Abraham Whelock's translation of 1643 was intended for scholars rather than public consumption. The public would get their view of history from the pulpit, interpreted for them by such as Bishop Ussher, whose chronology extending from his calculation that Creation began on 23 October 4004 BC was universally adopted."

With the flow of Anglo-Saxon texts and the increasing focus on Anglo-Saxon history among academic and church circles, liturgy-induced stories that lauded Anglo-Saxon piety, mixed with a sense of Anglo-Saxon liberty and law, encouraged a developing sense of a Saxon heritage in parishes, so as to compete with the overwhelming presence of a Roman-influenced past. To this background popular celebrations were transformed into such as commemorative 'Saxon fairs', and sites were adopted and monuments created to commemorate the illusory sites of real and imagined Saxon centres, religious conversions, and battle victories. An example related to hill figures was a 'monk's' turf maze cut at Hilton Huntingdonshire in 1660." Wider interest in Saxon customs and culture developed from John Selden's *Fant Anglorum Facies Altera* (1610), demanding an English translation in 1683; and Richard Hawkins's *A Discourse on the National Excellencies of England* (1658) fed a developing sense of national pride in Gothic-based historic deeds and feats. This period saw Mummers Plays and pageant processions deploying



contemporarily discovered historical personages, at which point several women characters suddenly became more celebrated. As tales of Robin Hood were 'remodelled' so Maid Marion made her first appearance at May games, Britannia became popularly renowned and first appeared on coins, and Lady Godiva made her first appearance at Coventry fair, which was reinstated in 1678. Other reinstatements included Gog and Magog; having been lost to the Great Fire of London in 1666 they were quickly resurrected and paraded as founders and defenders in pageants." Alongside renewed and refashioned traditions, new events were also initiated as rediscoveries. In 1680, for instance, the Revd. Thomas Hayward was granted the right to hold an annual fair at Stonehenge, which since 1663 had been publicly attributed through poetry to the - Danes."° These and many other public occasions were reinvented as descending from Saxon Merry England alongside the post-Restoration reintroduction of festivals dislocated from religion by the Reformation, and banned from the churchyard by Puritans."

Across England, and typically in Wiltshire, South Oxfordshire, and West Berkshire, every feature in the landscape and every peculiar custom has given rise to a history imagined to explain its being. Much of it came, as Raphael Samuel taught his students, 'with famed Saxons or Saxon monks attached'." The emphasis on a Saxon past was perhaps significantly encouraged in these and other locales by sixteenth- and seventeenth-century Oxford students who, having been stimulated by university lectures in Anglo-Saxon history and the Gothic identity promoted by the church, were active in the wider region, and of course graduated to pulpits nationwide. In 1742 the Revd. Francis Wise reported that Oxford colleges were connected to commemorations close to Oxford at Whiteleaf in Buckinghamshire. Links such as these could have been established through land ownership, but the number of other Saxon-styled celebrations in the region is either a general reflection of the penetration of the Saxon ideal, or suggests that the colleges may have been particularly active in encouraging 'Saxon'

commemoration at locations in the vicinity of the university. In addition to the scouring festival at Whiteleaf, Joseph Strutt cites an Abingdon churchwardens' account for setting up 'Robin Hoode's bower'. A pageant commemorating a victory by Cuthred King of the West-Saxons was annually celebrated at Burford on the Oxfordshire border with Gloucestershire, and of course there is the scouring festival at neighbouring Uffington."? The involvement of people from outside, at both Whiteleaf and Uffington, suggests not only an acceptance on the part of the local squire and remaining population," but that it may have been fostered and supported by a network of encouragement and information beyond parish bounds. Such a network at that time perhaps could only be facilitated through the church, or the seminary that was Oxford University.!

The church's hand in scouring in this period is evidenced in the Churchwardens' Accounts for 'Repairing of ye Giant 3s' at Cerne Abbas in Dorset." There are few surviving references recording any detail of scouring prior to the end of the seventeenth century. Two seventeenth-century accounts, one at Uffington and one at Tysoe, refer to scouring being performed as an obligated service for lands held, and four accounts dated between 1486 and 1541 appear in Plymouth Corporation's Audit Book for financial payment for 'ye renewing' and 'cuttyng' of the figures of giants carved into the face of the Hoe. While manorial obligation connected with take-up of land is understandable, and corporate payment for a municipal coastal defence strategy imaginable, church involvement at Cerne Abbas has been reasoned only in connection with the manor. The date of the churchwardens' account, however, is highly suggestive of the anti-Catholic commemorations of that period. It was only fifteen years after the 'Popish Plot' and celebrations of the failure of the Gunpowder Plot 1605 had been reinvigorated only six years previously when William Prince of Orange (1650-1702) landed at Torbay in neighbouring Devon on 5 November 1688. This event was celebrated at Cerne Abbas by the purchase of a commemorative thanksgiving book for 'being

preserved from Popery and arbitrary power'. The date of the landing lent further cause for celebration as November 4 also happened to be William III's birthday. The resultant fusion of celebrations has been most suitably summarised by David Cressy:

*And after 1688 the anniversary of the landing of William of Orange — significantly but fortuitously on 5 November — focused attention on the double deliverance of liberty and religion. Celebrations of William's birthday on 4 November became entwined with commemorations of his landing on the fifth. In a further mutation, the Gunpowder anniversary was harnessed to the struggle against arbitrary government and Jacobite tyranny, as well as popish religion.*

Whilst since 1605 an official day of thanksgiving, the Whigs made 5 November a holiday to recall the 'Glorious Revolution of 1688', and the established church used this uniquely English anniversary to denigrate any form of dissent. Traditionally-lit bonfires, a particular expression of freedom and liberty which were being celebrated as distinctive Anglo-Saxon attributes, became a vehicle for sectarian affirmation once reunited with the firework celebrations that had been banned between 1685 and 1688 during the reign of the Catholic James II." The vicar of Cerne Abbas in this period was the Revd. John Ball BA, who took up his post in 1672 and remained the incumbent until 1711. This may have been the John Ball who was born at neighbouring Yetminster in 1647, and who graduated from Oxford in 1666. It is tempting to associate him with Oxford's Anglo-Saxon bias, perhaps viewing the Uffington and Whiteleaf figures in the vicinity. He may even have witnessed or taken part in scouring ceremonies and, thus primed, took up his post in Cerne Abbas. However, whilst a seminary scholar might appear to be the most likely to discover and perhaps trace references," Cerne Abbas had no need to rely on the incumbent to discover an association with a Saxon past. The coming of Augustine in 597 was described in accessible Latin in Book One of Bede's Ecclesiastical History. William of Malmesbury promoted the story and from 1586 successive editions of Camden's Britannia published that Cerne Abbey

was founded by St Augustine of Canterbury, to commemorate the site where he had 'broken into pieces the idol of the heathen English Saxons'." An embracing emphasis had of course been placed behind the history of abbeys being founded by John Weever in 1631, and the modern definition of Augustine's standing in the Dictionary of Saints as 'venerated as the evangeliser of England as distinct from Roman Britain', "underlines the attractiveness to the post-Reformation church of exploiting a site associated with this key figure. Accessibility to Britannia was of course fashionably wide after the English translation was made available in 1610, and a new edition of Britannia appeared in 1637, so it was not so much restricted knowledge as current public history that Cerne Abbas had a Saxon idol called 'Heil'.

Whatever the actual origin of the Cerne Giant, the churchwardens of 1694 would not be paying for the refurbishment of the figure unless its believed identity conformed to church beliefs. The church authorities would not have been paying for the restoration if they thought the figure's origin (as now commonly considered) was Pagan Celtic, Roman Catholic, a Roman Hercules, or a cartoon Cromwell. This is not to argue that these must be dismissed as possible origins, but merely to reason that in order to pay for the restoration in 1694 the churchwardens must have believed the figure represented something with which the church would wish to be associated." What the church wanted to believe the Cerne Giant represented appears to have been noted in the year following the scouring of 1694, since the Bishop of London Edmund Gibson's new edition of Britannia reported that:

*"Cerne Abby was built by Austin the English Apostle, when he had dashed to pieces the idol of the Pagan Saxons there called Heil."*

Forty years on from the 1694 scouring, Cerne Abbas received a visitation from the Bishop of Bristol, who understandably enquired after the origin and meaning of the Giant. Another thirty years passed

before recollections of that visitation were added to the Minute Book of the Society of Antiquaries," which would reveal to few the opinion of the Revd. John Hutchins Rector of Wareham:

*Mr Hutchins himself thinks it was without doubt, intended for a memorial of the Saxon God Heil.*

Public accounts varied, however. One story perhaps not unrelated to the appearance of Swift's Gulliver's Travels in 1726 suggested that the Giant had fallen asleep on the hill and was tied down by peasants, and other stories remained undecided whether the Giant was 'cut by the Ancient Britons or the work of the Papists.'

Public attention was first drawn to the Giant through a pamphlet published in 1742 by the Revd. Francis Wise (1695-1767). Wise, of Trinity College Oxford, was the first to bring hill figure sites to wider public attention, and in addition to publicising the figures at Uffington, Westbury, and Whiteleaf, Wise wrote himself into history by being the first to publicize the Cerne Giant — despite not at that time having seen the figure. In a seemingly innocuous tangent in his Further Observations on the White Horse and other Antiquities in Berkshire (1742), Wise posed a question over the possible Catholic origin of the figure by referring to it as the 'Giant of Cerne Abbey Dorsetshire', then adds so sparse a description of a site so remote from his stated area of interest that only in self-promotion it appears was he mentioning it at all. Wise stated that he, 'had not time to examine the tradition concerning it', and that he did not want to impinge as the area was being researched by another antiquary, whom Wise does not name but may be assumed to have been John Hutchins. Wise was determined to make a name for himself, it seems, and it is perhaps no coincidence that at this time he was hoping to be elected to the Society of Antiquaries.

In his pamphlet of 1742, Wise brought to wider attention a horse figure that had been carved on a hillside at Bratton near Westbury. Although he

usually convinced himself that such sites were of Saxon origin, in this instance Wise stated that it had been made within the memory of those 'living, or but very lately dead'."

*The White Horse of Bratton-Castle in Wiltshire*  
*In the neighbourhood of Edington in Wiltshire, the place where Alfred gained the second most remarkable victory of his life, is a White Horse cut on the side of an high and steep hill, and under a large Roman fortification called Bratton-Castle, from the neighbouring town of Bratton : so in this respect 'tis not unlike the Berkshire Horse. Bratton Castle is likewise the very place whither, as antiquaries agree, Alfred after the battle pursued Guthrum the Danish King, ...Notwithstanding which I must give my readers caution about it. For did not the fabrick discover it to be modern, yet the inhabitants of Westbury, a borough town a mile from it, and instituted a revel or festival thereupon, might inform them as much; it having been wrought within the memory of persons now living, or but very lately dead.*

Wise could of course have been mistaken about the modernity of the figure, and the testimony could be referring to a scouring or even a redesign rather than a cutting,"! but the testimony appears plausible in the light of the church stance on Saxonism. Furthermore Wise's declaration that the figure was modern, as opposed to his customary habit of believing sites to be Saxon, makes this finding appear more credible." There was also an obvious precedent and model for the Westbury figure in the form of the geography, equinity, Alfredian associations, and festival of the Uffington figure. In terms of timing another hill figure, the Wilmington Long Man, has recently been dated to the seventeenth century, and there was also of course the scouring of the Cerne Giant in 1694 to underline active interest in cutting and maintaining hill figures in this period.? Another consideration is that the site was already publicly revered. The 1586 edition of William Camden's *Britannia* had embedded Edington near Westbury

in the public's memory as the site of the Battle of Ethandun, and its location and importance had long been promoted by the number of seventeenth-century reissues of Camden's work.

*Eddington where the fight was in the fields between the town and Bratton-castle, which without doubt was the place the Danes fled after their rout, and held out a siege of 14 days.*

During the period Wise suggests the figure was cut, stories highlighting Saxon battles and characters were increasingly circulated in the interests of the church. The Battle of Ethandun was actively promoted as the turning point of English history, and King Alfred became an increasingly recalled and widely admired historic figure, with his role being emphasised in the public's mind through received definitions of England's foremost historic character, model king, and greatest ever Englishman." It is then unsurprising that other landmarks created to commemorate Alfred and the Battle of Ethandun appeared in the period that followed. In addition to the bust of Alfred that adorned the Temple of Worthies at Stowe, the Jacobite-leaning Tory Lord Bathurst revealed, when writing to Alexander Pope on 24 July 1732, that he had almost completed his 'Hermitage'. This was a folly in the form of a castellated ruin in commemoration of Alfred the Great's famous victory at Ethandun that he named 'Alfred's Hall',<sup>o</sup> and it was later claimed as the place where Alfred dressed as a minstrel in order to pass amongst the Danes and discover their plans." Alfred's Hall was later paralleled by 'Alfred's Tower', built at Stourhead in 1762 to mark both the supposed point at which Alfred rallied his forces to fight the Battle of Ethandun, and the accession of George III." Indeed George III's rise to popularity seems to have been foreshadowed by a number of Alfredian publications, including A. Bicknell, *The Life of Alfred the Great: King of the Anglo-Saxons* (London 1777), Robert Holmes, *Alfred: An Ode, with Six Sonnets* (Oxford 1778), Owen Manning, *The Will of King Alfred* (Oxford 1778), Ebenezer Rhodes, *Alfred: An Historical Tragedy* (Sheffield 1789), and John Penn,

The Battle of Edington, or, British Liberty: A Tragedy (London 1792).° Alfred's reputation and popularity had been reaffirmed following the Hanoverian succession, and with a Saxon present to compare and match with the Saxon past new slanted interests in Saxonism had surfaced. Rosemary Sweet illustrated this point through Edmund Gibson's dedication to George I, that echoed Verstegan's, 'chiefest blood royal of our ancient English Saxon Kings,' dedication, and appeared in the revision of Camden's Britannia 1722:

*Not only our Histories, but our Language, our Laws, our Customs, our Names of Persons and names of Places, do all abundantly testify, that the greater part of your Majesty's Subjects here, are of SAXON Original. And if we enquire from when our Saxon Ancestor's came, we shall find, that it was from your Majesty's Dominions in Germany."*

Britannia, as already stated, was often the spur underlying public interest, and its promotion of the etymology of place names and increasing focus on Anglo-Saxon history had a stimulating effect on the enquiries of antiquaries.! The 1722 edition, which carried Gibson's dedication and contained a list of common Saxon place names, appeared in the same year in which Bodley's Sub-Librarian, the Revd Francis Wise, published his text of 'Asser's Life of Alfred' (1722). Stimulated perhaps by Britannia and quite possibly through the attention given to Anglo-Saxon history at Oxford University, where he gained his appointment of Keeper of the Archives in 1726, Wise started to further his interest through exploratory field studies." In 1738 this resulted in the publication of a pamphlet promoting Uffington White Horse as a monument cut to commemorate Alfred's victory over the Danes at the Battle of Ashdown in 871."

Wise's pamphlet undoubtedly advertised the Uffington horse and invested a more detailed association with Alfred through a relatively cheap and readily accessible account, but as scouring festivities and encouragement to associate with Saxon sites had long been taking place, he may



merely have been endorsing what was already believed by the majority of those familiar with the landmark. Despite the battle having been fought under Alfred's brother Ethelred, and at a location which remained unknown, the belief that the Uffington horse was cut to celebrate 'Alfred's victory' at Ashdown was directly drawn from the existence of the landmark, and of the immediate evidence of human intervention through the barrows and other earthworks in the surrounding landscape. Unless determined by shape and size as defensive barriers, barrows and other earthworks were believed to be burials that, being outside churchyards, were explained as resulting from war. Sir Thomas Browne (1605-1682) confirmed in a Tract on Artificial Hills, Mounds, and Barrows that barrows were 'hills of interment for remarkable and eminent persons, especially such as died in wars'. The large number of barrow groups in the surrounding area of the White Horse was taken to confirm that a great battle had occurred on the Downs; and the proximity of the hill figure to the place-name Ashdown identified it as the site of the battle of Ascesdune." The theory was further endorsed by nearby Wantage being celebrated as King Alfred's birthplace, and Alfred's fame and the renown of the battle gave rise to a landmark becoming known locally as 'Alfred's Castle'. In addition the post-Reformation church may perhaps be thanked for 'Christening' the remains of a Neolithic long barrow after the early Germanic legend of "Wayland". These local names were then used as ancient proof of the great battle that took place, which of course was corroborated by the Saxon horse being the emblem of Hengist and Horsa, and hence adopted by Alfred, as Wise himself suggested:

*No-one can be ignorant that the Horse was the Standard which the Saxons used, both before and after their coming."*

Thus although historical knowledge spread and intensified from publications, with translations and ideas filtering out from those, such as the clergy, who had access to this material, the harbinger of historical awareness in cases such as Uffington was often the

site itself. And it is no coincidence that many of the Georgian chalk horses were carved below earthworks and other landmarks. The hill figure was a constant reminder that something happened at this place in history, and immediately prompted anyone witnessing it to ask questions. Such questions myth and legend were more ready than history to answer. In the example of the Uffington White Horse, its presence was such that it was considered ancient and magnificent. Therefore it had to have been instigated to commemorate something equally ancient and magnificent, and there was no more widely known great historical act in the vicinity than 'Alfred's victory' over the Danes.

Seemingly nothing could override the overwhelming popular wish for a Saxon connection throughout this period, and even the most plausible and well presented counter-argument was ignored." Wise's original findings were published in A Letter to Dr Mead concerning some antiquities in Berkshire, particularly showing that the White Horse, which gives name to the great Vale or valley which it overlooks is a monument of the West Saxons, made in memory of a great Victory obtained over the Danes A.D. 871 (Oxford, 1738). This met with a methodically argued if vitriolic riposte in 1740 from the pseudonymous 'Philalethes Rusticus', believed by Plenderleath to have been the Revd. William Asplin, vicar of Banbury." In The Impertinence and Imposture of Modern Antiquaries Display'd: or A Refutation of the Rev. Mr. W/se's letter to Dr. Mead, concerning the White Horse and Other Antiquities of North Berks, In A Familiar Letter to a Friend (1740), Rusticus not only mauled Wise's appraisal of Uffington White Horse, but made clear that there was no direct evidence connecting the hill figure with the West Saxons." The character assassination of Wise and the sarcasm with which it was embellished, however, somewhat worked against what was being argued." The serious points Rusticus made were subsequently overlooked, and his interjection launched a famed dispute that made the White Horse even more widely renowned than ever before. Consequently the only lasting effects were born of his insults and any reactionary distortions through which Wise thought to justify

himself.

In the year following the attack by Rusticus, Wise was defended by the Revd. George North, in *An Answer to a Scandalous Libel Intituled 'Impertinence and Imposture of Modern Antiquaries Display'd'* (1741). North and Wise did not know one another, and prior to the attack from Rusticus being published North had himself been among those finding fault with Wise's pamphlet, albeit in a rather less hostile and more private way.''' The reason for North's transition from private critic to public defender is unclear, although the suggestion that North 'took pity' on the besieged Wise has been made by Leslie Grinsell, who credits North's publication with having lent Wise sufficient confidence to publish more of his researches." Wise perhaps had no need of North's intervention, however, as he more than ably defended his position with a follow-up publication in which he shrewdly introduced another category of turf hill figure, the Christian Saxon cross monument.

In *Further Observations on the White Horse and other antiquities* (1742), Wise's account of the Whiteleaf Cross (Fig. 5), a figure carved in the Chiltern Hills in the shape of a Greek Cross mounted in a pyramid stand, appeared in the wake of Stukeley's Christian-embraced Stonehenge. By Christianizing hill figures alongside ancient monuments in general (as purported by Stukeley and to all outward appearances officially endorsed by the church), Wise laid the foundation for an expanding belief that hill figures were monuments created at the very moment that England converted to Christianity. The horse therefore denotes a victory gained by the Saxons over some other people, the Cross some action in which the Christians prevailed over the Pagans."

If accepted, Wise's findings would launch hill figures into areas of status that could not be more highly regarded in England, and as this class of monument was something very much wanted ever since Matthew Parker adopted stories of Joseph of Arimathea, there was a tendency of wanting to believe and willing it to be true. In order to be accepted, however, the cross hill figure required an

inspirational history which by contemporary logic would have to involve a battle over pagan opposition. This then should have disqualified the Whiteleaf hill figure site, as there was not any tradition in respect of any known battle taking place nearby. Wise, however, etymologically argued such a battle into existence by translating neighbouring Bledlow as 'Bloody Hill', then reasoning that this meant a place where Danes were massacred. Incredibly, Wise then embroidered his translation by concluding the site was on the line of a Danish retreat in AD 921, and that the Danes had met their end fighting a Saxon force under the command of Alfred's son Edward the Elder. To complete the image Wise decreed that the 'globe', the traditional local name given to the stand part of the Whiteleaf hill figure, should now be known as the 'Altar' and the foundation was laid for the belief that this represented Calvary."

While some of Wise's findings may seem to us quite bizarrely reasoned, it is notable that the naturally decaying hill figure sites he made out to be Saxon heritage were regularly maintained. This was during a period when naturally robust Avebury megaliths were being destroyed with 'no less than four villages, two parish churches, and a demolished Chapel' having 'risen out of the Ruins'."

Wise died in 1767 with his reputation and findings remaining assured only where he had decided a site was Saxon. In his revision of Camden's Britannia published in 1789, Richard Gough endorsed Wise's view of the Uffington figure by stating:

*This horse is with great probability supposed to be a memorial to Alfred's victory over the Danes at Ashdown."*

Gough, however, reveals the strength of the preconceived longing to impose a Saxon heritage in the description of the Westbury figure in his 1806 edition:

*an undoubted memorial of this important victory (at Ethandun), and similar to that by which Alfred commemorated his first great victory in Berkshire eight years previously . . . I am surprised this very learned investigator (Francis Wise) of these kind of monuments among us should doubt the antiquity of this horse which so exactly corresponds with the other both in execution and intention, and represent it as a modern make within memory. As I could find no such tradition when I surveyed it in 1772, he must have been misled to confound the scouring with the original making."*

## THE SAXON OLYMPICS

On the last occasion the Uffington White Horse was scoured in 1857, the ordinary people of the district came together to restore the figure as a precursor to a two-day festival. This festival, or 'pastime' as it was known, was recorded by Thomas Hughes in *The Scouring of the White Horse* (1859). Although written in novel form this describes actual events as Hughes witnessed them on his return to his home village of Uffington in 1857.<sup>1</sup> The content of the festival was similar to Uffington feast, which Hughes described in the more widely known *Tom Brown's Schooldays* (1857).<sup>2</sup> Through Tom Brown Hughes explains that although there was no longer any remembrance of why the 'veast' had started; that it was more ancient than a statute feast; and was established in the churchyard on the wake or festival of the patron saint, and had remained on the same day ever since. The feast it seems still held many customary games in as traditional a format as anyone could remember, and these events were repeated in similar form at the revels that accompanied the scouring, including such as 'backswording' and wrestling, sack races, pole climbing, and grinning (gurning or grimacing) through a horse collar (Fig.3). Even the *Victoria County History for Berkshire* subscribed to the view that

*the cudgel playing and other rural sports and festivities which always followed, may very well be the modern survivals of periodical religious gatherings when the inhabitants of the Vale of the White Horse met for*

*religious rites or ceremonies.*

The feast, however, was undergoing transition. The 'gentlefolk and farmers have taken to other amusements' bemoaned one of Hughes's characters. "They don't either subscribe to the prizes, or go down and join the fun", he continued, further noting that the prizes were no longer 'enough to draw any very high talent from a distance'. What a contrast then Hughes paints of the revels accompanying the scouring of the White Horse, the impression of a dignified occasion exuded through such as the Lord of the Manor presiding over age old amusements, and folk from far and near attending in huge numbers to participate and partake of the spectacle. Hughes still reports signs of change, but in all promotes the scouring revels as a model of traditional consistency and grounds for continuing patronage. The basic difference between the success of the scouring revels and the root of the problems behind the feast it seems, 'arises from the further separation of our classes'. The scouring revels of a century before had also been shunned by the upper classes, but Hughes was aware that those revels had been transformed into unprecedented success and popularity through the sanction and presence of the élite. The popularity proving so infectious, it was the launch-pad for a stable of white hill horses carved across Wiltshire and further afield.

Wise recognised, much as Hughes would a century later, that twists of history had taken the customary practices of feasts and revels through an unfathomable maze.

*The ceremony of Scouring the Horse ...which from time immemorial has been solemnized by a numerous sack races, pig catching, including climbing the greased pole, festival games...*

*concourse of people from all the villages round about...that the meaning of this custom has been so long forgot, is not at all to be wondered at, considering the convulsions, and changes, which the state of our nation has undergone, the ignorance that ensued, and the persons to whose care it has chiefly been left to keep it up. The same thing may be observed of other*

*customs with great strictness observed by the vulgar, though they are unable to give any tolerable account of their origin, particularly that of Wakes, or Feasts of The Dedication of Churches . . .*

Wise, however, focussed upon a replication of some imagined Saxon origins. Upon discovering the games, he not only placed a commemorative reason behind them, but he underlined their value, then called for the 'RESTORATION OF THE SAXON OLYMPICS'.

Since therefore this noble antiquity (the Uffington White Horse) is now explained, and consequently the reason for the Festival, it were to be wished, that, in order to prevent for the future its falling into oblivion, some care was taken of the regulation of the Games, and that they were restored to their ancient splendour, of which, without question, they are fallen much short.

Wise believed there would be no return to his imagined former times whilst the festival was in the hands of the ordinary people, and that this transformation could only be achieved by:

*the countenance and presence of Nobility and Gentry; which would have a good influence upon the assembly, add decency to the meeting, and restrain the excesses of the populace."*

Revels were not, however, the chosen holiday entertainment of the gentry. Popular culture was subject at the time to the recommendations of Henry Bourne's *Antiquitates Vulgares* (1725), that decided what should be patronised and what renounced; unsurprisingly revels where unsophisticated games such as shin-kicking were held were not to be recommended. The upper classes had their own customary sports and amusements. They had no heartfelt interest or sense of hereditary belonging in connection with the revels in the same way as ordinary people, and there was no attraction or

motivation for them to attend. The upper class simply did not identify with the events and the reputations, as Hughes described in Jom Brown's Schooldays:

Benjy himself had won renown long ago as an old gamester, against the picked men of Wiltshire and - Somersetshire, in many a good bout at the revels and pastimes of the countryside. For he had been a famous backswordman in his younger days, and a good wrestler at elbow (arm wrestling) and collar (wrestling). Backswording and wrestling were the most serious pursuits of the Vale — those by which men attained fame — and each village had its champion.

The autonomous organisation of the scouring revels by the ordinary folk of Uffington, it seems, may have developed from customarily impromptu and unstructured trials and tests. These can be imagined evolving from fun and games, during and after work in the fields. Racing downhill on the manger after a cartwheel epitomises the topographical rusticity of the scouring revels described by Hughes, and is an example of how even very tired working people will be tempted to utilise their environment and adapt equipment in some form of trial or measure of each other. Climbing the greasy pole and sack races are obvious adaptations from the working environment, and the custom of clothing as prizes perhaps developed from impromptu wagers by people who had nothing else with which to back a claim or offer as reward.

Festivals of games often arose from seasonal calendar rituals that had originally ensured labour collected at the right time and place to perform intensive tasks. These would include such as meadow mowing, waste clearance, or boundary marking. Effective completion of these collective tasks providing an opportunity for communal recreation and diversionary amusement, in addition to collective mingling. These social and recreational opportunities appear to be the reason at least in part behind the survival of these events after customary tenure and contract leases had superseded direct labour services.' This appears to be the case at



Uffington. Paul Newman cites Thomas Cox stating in *Britannia* (1720), that scouring was conducted at or near midsummer, and completion of the work witnessed feasting and merriment at the end of the day.

Hughes describes the scene when the scourers had just finished work, 'sitting round a large can of beer which the Squire has sent down to them', and supposedly singing the 'Ballad of the Scouring of the White Horse':

*The owld White Horse wants zettin to rights,  
And the Squire hev promised good cheer,  
Zo we'll gee un scrape to kip in zhape,  
And a'll last for many a year.*

Hughes underlined the fiction by stating immediately prior to this passage that this might be a joke," and Plenderleath was amongst those recognising the modernity of this ballad, as was Flinders Petrie. There remained the suggestion, however, that the Lord of the Manor held his land in part under an 'obligation to feed and entertain the assembled company'. A modern tradition of sponsorship certainly dates from the enclosure movement, and subsequent to this residents in Cumnor were able to claim beer and bread from the incumbent at a festival, but the patriarchal patronage of scouring revels adopted by Craven is not the same as obligation." Revels and similar events had a tradition of home brewing. Independent of any manorial obligation or religious ritual, festivals of games had, since the Restoration, been reliant on individuals bringing 'their own victuals and contributing some petty portion to the stock'."! Once former ales, wakes, feasts and festivals were free of the church, however, entrepreneurial innkeepers started to sponsor festivals by deploying prizes in order to attract participants and spectators. Thus revels in many cases were held in the grounds of the inn, such as at the Crown Inn at Theale and the Red Lion at Basildon."? Once established, stallholders were invited to set up in the grounds of the inn, just as they would at fairs and markets, and

home-brewers followed suit as the crowds increased by opening unlicensed bush houses en route to the revel inn or fairground, as they did at Stockton and at Swindon." Bush houses were notorious for riotous behaviour, however, and were eventually forced to stop trading or become licensed. Those that survived sometimes retained the title of 'bush' in their name 'as in the case at Hampstead's 'Old Bull and Bush', which may be recalled from musical hall song fame. This change in drinking habits was recalled by Hughes through the words of an elderly local in *The Scouring of the White Horse*:

*Sir, a man medn't brew and sell his own beer now: and oftentimes he can't get nothing fit to drink at thaay little beer-houses as is licensed, nor at some o' the public houses too for that matter."*

Through this novel Hughes also highlights the change in the tradition of 'prize attractions', which until 1776 had remained characterised by clothing, that would often be in the form of hats, gloves, and buckles. This remained the form for prizes not just for most revels, but all manner of competitions for the working class. Dating from 1715, 'Doggett's coat and badge race' is the oldest annual sporting event still held in England, and the winner of this boat race on the Thames is still to this day awarded a badge and a coat. This is of particular relevance to the horse hill figures introduced later in the century as the badge motif is of the Hanoverian horse (Fig. 4), but the coat and badge prize also marks this race out as being for working boatmen.

Cash was the customary currency for wagers between gentlemen racing on horseback, which in time saw cups adopted and alongside junior events sponsored prizes of saddles, whips, and similar tack. A horse race exclusively for gentlemen of worship was inaugurated as early as 1610, and accompanied by a St George's Day pageant." Horse races were mostly nomadic ad hoc matches, however, until 1711, when the course at Ascot is stated to have developed from a natural clearing Queen Anne first noticed near

Windsor Great Park. The Racing Calendar was first published in 1729, and as organised racing had become established so newspapers regularly featured columns advertising racing meets offering prizes in the form of cups and cash, which appeared alongside advertisements for revels, where the prizes remained clothing as was customary." Unsurprisingly then, the addition of horse racing to the Uffington scouring revels in 1776, saw prizes of a cup and tack appear alongside clothing awarded for the more traditional revels events. It was then only a matter of time before the tradition of offering cash prizes, developed in association with horse racing and other gentlemanly sports, spread to most other events at the scouring revels." Monetary awards in association with sports other than racing were not unknown at the start of the nineteenth century, and included 'prize-fights' and backsword competitions. One handbill for 'Backsword Playing' to be held in the Square, Swindon in September 1808, offered 'Old Gamesters' a prize of twelve guineas to the winner on the first day with three guineas to whoever came second, and three guineas to the best 'Young Gamester' (anyone who had never won a prize over 10s. 6d.), and one guinea to whoever came second. In addition the winner of each bout received 2s. and the loser 1s., with the bout being decided by drawing blood that ran at least one inch from an opponent's head." Prior to this period the backsworders competed for some token of clothing, and at the end of a bout the declared winner would reverse their homemade weapons, which had a wicker hand-guard that usefully doubled as a basket for collecting coins, and held this out to the crowd for donations, customarily giving part of this 'prize money' to his defeated opponent. The change to bouts sponsored with cash prizes was therefore not as dramatic as Hughes appears to convey, by posing a character in his novel comparing a handbill of the 1776 scouring to the programme for 1857:

*Our great grandfathers you'll see gave no money prizes: we scarcely any others.*

The metamorphosis of plebeian cultural events under élite intervention has an extensive history, and

includes Robert Dover's early seventeenth century transformation of the Chipping Camden cum Weston Whitsun Revels into the Cotswold Games. Unlike traditional revels these new games, as Ronald Hutton points out, were 'a new departure taking its model from ancient Rome and consisting of sports, with an emphasis on competition and prowess'." Although not in any accentuated way some revels events also had elements of competition and skill, particularly wrestling and backsword play. With the onset of sponsored prizes these events took on a regional focus. And as entering names on the day became the practice, with contestants travelling from afar, so a partisan competitive edge entered the games with the names of champions from distant shires becoming known because they regularly competed on what became a revels circuit. This soon led to shire teams travelling to revels as challengers, and a travelling spectator base developed that would also try their hand at the other events as the majority of games were such that anyone could participate, and the spirit of doing so deemed most important.

Until 1776, there was little in which the 'Nobility and Gentry' could participate and unsurprisingly they had been notable by their absence, despite Wise attempting to encourage their participation in his pamphlet of 1738. The addition of the horse race and cup introduced in 1776 therefore created a figurehead which acted as a draw, and was an innovative departure in celebration of new ownership. This followed an estate survey the previous year, that was executed as part of an enclosure agreement, upon the completion of which in 1778, the Earl of Craven was awarded the land on which the figure stands. Elisabeth Craven had purchased Uffington manor in 1620,<sup>100</sup> but the land on which the White Horse stood was part of neighbouring Woolstone Down, and during the last years of scouring under manorial custom it seems this land was held by Lord Barrington.

That ancient piece of antiquity (in this neighbourhood) the White Horse was cleaned for many years by William, Lord Barrington, but the grounds on which the Horse is cut being allotted by

the Commissioners for the Uffington inclosure 1775 to William, Lord Craven His Lordship has since that time cleansed it annually at His expense and has twice celebrated the Scouring of the Horse with many country diversions viz horse racing, ass racing, men running in sacks, men running down the steep part of the hill for a cheese, boys dipping 1n a tub of meal for a bullet etc. At both which sports there were computed to be upwards of 30,000 spectators. His Lordship gave a most elegant cold collation in a large booth to all the gentlemen of the neighbourhood who were present and likewise strong beer to the common people'."!"

Amongst much of interest in this passage, what is particularly enlightening is that the White Horse was being weeded on an annual basis. Thomas Cox had stated as much in 1720," but with Wise thinking the scouring cycle driven by 'seed times and fallow', the length of this agricultural cycle took on Wise's vision of a reinstated Saxon Olympics:

*If the times of solemnising this Festival, which has often been left to the discretion of the inhabitants, was fixed to some certain period, suppose a revolution of four years, as perhaps was first intended.!°*

In part a legacy of Wise's Olympic dream, the traditional view of the Uffington scouring cycle has been an inexact seven-year interpretation based on scouring dates posed by Thomas Hughes. Only one occasion was recalled by Hughes prior to the new management event of 1776, and the idea that scouring was on a long cycle has been compounded by the episodic treatment of hill figures since that date. The common belief that scouring was maintained at roughly a seven-year cycle was reinforced by the apparent robustness of those figures which have remained visible despite irregular and even abandoned care, thus suggesting that more regular maintenance was somehow unnecessary and therefore would not have been executed historically at any less a frequency. Given that the Shrivenham record states that scouring was annual, however, and clearly separates this weeding process from the longer cycle applied to the new form of celebratory revels, the yearly scouring carried out in this period

appears to have been continuing the precedent reported by Cox. The introduction of direct labour by Lord Craven can then be recognised to have negated the precedent in terms of annual games, but not the annual scouring cycle. The efficiency of annual scouring was demonstrated at Marlborough, where scouring was ably executed each year by a small group of children. Certainly the most arduous task in connection with scouring, that of fetching and replenishing chalk, would be considerably lightened by annual weeding — the removal of overgrown areas would be less and the requirement for chalk on these occasions would be kept at a minimum. And although Morris Marples was amongst those led to believe by Wise and Hughes that scouring was seven-yearly, it seems he also had an inkling that it was not so infrequent when he stated:

*One would have thought that an event which only occurred once every seven years could scarcely have aroused much opposition.*

At Uffington scouring appears to have remained annual into the new century. Then at some point it halted and was executed only alongside celebrations, the occasion and frequency of which were held at the discretion and determination of the owner. With the loss of annual revels traditionally linked to scouring, any surviving traditions also became overrun. The addition of prominent events such as horse racing and cash prizes tended to overshadow the simple rustic traditions, and these customary events were transformed by a shift in emphasis. A carthorse race was introduced with a 'thill' harness as a prize. The winning rider would therefore not personally benefit from the award and would be racing to represent their employer. A dress code was very much part of this new ritual, with the insistence that carters entering races do so in smock frocks, for despite the terrible destitution surrounding the agricultural labourers their environment was being painted an Eden to avoid jarring the consciences of the spectator. Through prizes of smocks women were being liveried as if they were farm stock, and like the carthorses would run for something they would then wear to

work.' As traditional items of clothing as prizes shifted from tokens of individuality to branding in this way, it reflects how the scouring revels were transformed from communal recreation for the masses, into a spectacle to entertain the upper classes.

This attitude to rural workers spread through the agricultural improvement societies founded in the 1770s. Following the establishment of the Board of Agriculture in 1793 rural fairs became dominated by the comparison and testing of machinery by the Royal Agricultural Society.<sup>10</sup> The annual dinners organised for subscribing members of the agricultural societies started to accommodate their staggered arrival times by laying on entertainment throughout the day, such as ploughing matches ostensibly arranged to instil pride in agricultural workers. This was the acceptable face of watching the lower divisions at play, whereas the unacceptable face was disguised by the practice of wearing false beards and moustaches while watching organised dog fights.<sup>11</sup> But even the former drew criticism from those doubting the suggested benevolence and hierarchical paternalism. Mr J. Walter of Bearwood Estate inaugurating a harvest home in 1840 for his tenants and all their labourers to:

*manifest his disapprobation of the associations which have been recently instituted for the alleged purpose of advancing the well being of the agricultural labourer ... (by) seeking the aid of the many to save the pockets of the few."*

This process was in its infancy three quarters of a century earlier, on White Horse Hill.

The Ceremony of the scouring and cleansing that noble monument of Saxon Antiquity the White Horse on the side of Cuckhamsley Hill in this county, was celebrated on Whit-Monday with great joyous festivity; besides the customary diversions of horseracing and foot races etc., many uncommon rural diversions and feats of activity were exhibited to a greater number of spectators than were ever assembled on any former occasion, upwards of 30,000 persons were present and among this most of the nobility of

this and the neighbouring counties, and the whole celebrated without material accident. The origin of this remarkable antiquity variously related but most authors described it a monument to perpetuate some signal victory near the spot by some of our most ancient Saxon princes. The space occupied by this figure is more than an acre of ground.'"

The united belief that hill figures were Saxon and Christian forged the unity behind the reinvented scouring ritual, and its increasingly legendary popularity was inveterately bonded to public consciousness. Hill figures and scouring no longer represented their own celebrated origin, but a long-standing feudal interrelationship born of the 'free' Christian English, the white horse coming to represent a mythical unity between England, monarchy, church, and all classes of people, passed down with continuity through the ages from a Saxon Christian beginning. The Anglo-Saxon ancestry projected on to the hill horse, complete with Alfred apices of liberty, law, defence, constitution, and chivalry born of heroic Christianity, was firmly rooted at the heart of English national identity.'!° From this a reinvented tournament splendour developed that would later see Lord Wantage of Lockinge parade as Alfred the Great at his own revels. Meanwhile the Uffington scouring revels were to be found amongst the ancestry of the chivalric manly Christianity of the nineteenth-century Eglinton Tournament, as discussed by Mark Girouard in *The Return to Camelot* (1981).<sup>1</sup> In terms of forerunners it preceded even the medieval styled tournament that Linda Colley recalls organised in honour of General William Howe, in 1778.

The structure of the eighteenth-century scouring revels appears to have found particular favour with social organisers. For while not previously unknown, the format of this carousing open-air celebrity junket proved subsequently infectious in the last quarter of the eighteenth century. The elaborately staged regalement of prominent people, while beer was laid on for villagers to join in the celebration, became an increasingly recurring theme. The closely structured



format of this celebration was fashionably repeated throughout the centenary celebrations of 1788, and not only at each of the Uffington scouring celebrations that followed, but the pattern of hosting and displays of status were replicated, for example at meets during the spread of organised hunts.'! The Georgian élite was as delighted, as the later Victorians would be disturbed, by the size of the crowd, that was taken in these earlier times as a compliment and widespread agreement in mutual celebration.'" Scouring revels, then, had become an entity of patrician power, where the ruling elite measured their social, cultural, and economic superiority, and the landowners affirmed their position as hosts of the ritual as an event. The reinvented occasion of scouring at Uffington proved so popular among the upper classes that it seemingly gave birth to a new horse, cut more often than not in the same year, as can be seen from Table 1 below:

Table 1. The advent of chalk horses following scourings - at Uffington 1776-1857.

Uffington Scourings	New Horse Figures
1776	Westbury (1778)
1780	Cherhill
1785	Pewsey
1803	Marlborough (1804)
1808	Osmington
1812	Alton Barnes
1838	Hackpen
1843	Devizes Snob (1845)
1857	Kilburn

Sources: Thomas Hughes, *The Scouring of the White Horse*, (Cambridge 1859), pp. 106-117; Revd W.C. Plenderleath, *The White Horses of the West of England, With Notices of Some other Ancient Turf Monuments* (Calne, second edition 1892), pp. 18-36; Morris Marples, *White Horses and Other Hill Figures*, (London 1949).

FOLLIES

The new chalk horses were introduced during the period that eye-catching landscape features at Stourhead, a number erected coaxially opposite each other either side of the lake, were influential in extending the fashion for drawing attention to the extent of land ownership through conspicuous landscape features.<sup>!!°</sup> In the year Capability Brown was appointed master gardener at Hampton Court, a possible forebear of the new chalk horse hill figures appeared not far from the Whiteleaf Cross. The Watlington White Mark is an obelisk shaped hill figure carved, remodelled, or scoured, perhaps by Edward Horne of Greenfield Manor, in 1764.<sup>!!°</sup> Having been introduced to a background of fashionable follies and obelisks this figure was perhaps considered to have required no other inspiration, but in 1851 a story was recorded that the monument had been cut by the vicar of Watlington as a substitute as his church, the adjacent St Leonard's, didn't have a spire.'" As Rodney Castleden has pointed out, the mark is directly in line with the church and conforms to an expected shape and size, so the story cannot be ignored. There is additional mystery in the seemingly sudden appearance of a cross hill figure at nearby Wainhill. The Bledlow Cross had not been noted during Wise's visit, so was either missed or subsequently manufactured or restored. It was recorded for the first time in 1827:

*A gentleman, who visited it a few days ago, and who is somewhat of an antiquary, had the curiosity to measure its dimensions, and to examine it very narrowly. He supposes it to have been made by the Saxons about the time the Whiteleaf Cross (from which it is not very distant) was formed...'*

The Calendar of Patent Rolls with an entry dated 18 September 1350 features 'Henry atte Crouche of Bledlowe' that could translate to Henry at the Crosse of Bledlow, which would suggest the Bledlow Cross to be older than the figure at Whiteleaf (Fig. 5). Although this remains the probable interpretation,

it is intriguing that a John Crosse of Bledlow was High Sheriff of Buckinghamshire in 1693, and there are Crosse family tombs in the floor of the nave of Bledlow church, a structure that dates from the thirteenth century. If Wise, and Stukeley who also visited the area, somehow missed the Bledlow Cross and it was truly ancient, the scouring or even the cutting of the figure could have been prompted by Wise's invented Christian battle triumph over Paganism.'!? The proximity of the Whiteleaf figure could be a possible motivator, of course, but while this figure seems not to have inspired any apparent cutting or restoration of figures prior to Wise's publication of 1742, it is perhaps indicative that the Revd. Baker records that the connection between Oxford colleges and scouring at Whiteleaf remained current in his day, and had therefore spanned the period when the Bledlow Cross was cut or scoured.'''' This inevitably links the seminary students with any likely cutting or restoration, and in addition explains the lapse in care through the constant throughput of students and changing of scholarly focus. In connection with the new horse figures it is perhaps even more important to note that the Christian emphasis placed on hill figures remained as much to the fore as a Saxon identity at the time the new horses were cut. This was a religious and Gothic focus that was seemingly amplified by the accession of George III.

An astonishing procession of interrelated unveilings followed the accession of George III, so that the English landscape and what travelled through it started to take on a new look. The year 1762 in particular witnessed not only the unveiling of the extraordinary state coach designed by William Chambers. In this same year Chambers would start a neoclassical make-over of the newly acquired Buckingham House, and also in this year Allan Ramsay's state portrait of George III was unveiled. Mirroring the unveiling of Alfred's Tower at Stourhead a Pagoda appeared at Kew. The Botanic Gardens had been founded in 1759, by Augusta, widowed mother of George III, in the vicinity of a newly erected ruined arch. In 1760, the year he acceded to the throne, George III

inherited the estate from his grandfather, and in 1766 brought in Lancelot Brown to redesign the landscape into the new 'naturalistic parkland', deploying the ha-ha to form boundaries without encumbering views.'?! Kew became popularised under George III, but nothing gained more popularity in his reign than the king himself. When George I died in Hanover in 1727 there was no clamour for the return of the body for a state funeral and no statue erected. George II fared no better, as his funeral was 'not well attended'. With ritual crowd structures proving a success at scouring festivals, however, the embryonic format would grow into public exhibitions associated with royal occasions launched by George III's unprecedented Jubilee celebrations of 1809.'"

Numerous landmarks were dedicated to George III, notably the chalk horse featuring the king in the saddle carved at Osmington in Dorset in 1808 and an equestrian statue that appeared on Weymouth Esplanade the following year, each of which were perhaps timed to be ready for the Jubilee celebration. It was later speculated that after patronising Weymouth regularly following his recovery from illness in 1789, the king no longer visited having taken offence at the hill figure, the chosen direction of which was interpreted as depicting him leaving the area. The royal visits ended in 1805, however, three years before the hill figure was cut, and the year after the figure appeared George II encouraged his daughters Amelia and Mary to take up residence in Weymouth, a move which hardly reflects umbrage.'"' It appears to have been overlooked that the king was by this time becoming blind and deaf, and soon after became permanently insane. Little is known of the origins of the Osmington carving, but it could just as easily be translated as showing the king being able to leave the area fit and well enough to ride, having fully recovered after arriving ill and by coach. George III's recovery from porphyria 'madness' in 1789, was similarly celebrated in a dedication attached to the north side of the Ailesbury Column in Savernake Forest:

*In commemoration of a signal instance  
of Heaven's protecting providence over these  
kingdoms in the year 1789  
by restoring to perfect health from  
a long and  
afflicting disorder their excellent and  
beloved sovereign George The Third.*

This column was second-hand, having previously been raised in Hammersmith in 1760 by George Bubb Dodington in memory of his wife, and its re-use in 1781 was accompanied by a sycophantic dedication.

*This Column was erected by Thomas  
Bruce, Earl of Ailsebury, as a testimony of gratitude to  
his ever honoured uncle Charles, Earl of  
Ailsebury and Elgin, who  
Left to him these estates, and procured for  
him the Barony of Tottenham, and of loyalty to  
his most gracious sovereign George the Third, who  
unsolicited conferred upon him the honour of an earldom, but  
above all of piety to God, first, highest, best, whose blessing  
consecrateth every gift, and fixeth its true value  
MDCCLXXXI*

The Ailesbury Column was erected in a landscape recently 'improved' by Lancelot 'Capability' Brown, who was similarly employed by Lord Abingdon to create a rustic parkland at Rycote in the same year as the new Westbury horse was cut. Lord Abingdon's surveyor Mr Gee has traditionally been blamed for the erasure of the old landmark, but even the renowned Lancelot Brown recommended 'capability' and did not implement changes without detailed consultancy.' It therefore seems unlikely that the agent would have taken it upon himself to cut, let alone design, a new figure, and certainly would not instigate work at considerable labour and expense without some form of direct instruction. Like the survey of Uffington carried out for Lord Craven in 1775 which saw scouring sponsored by Craven the following year, Mr Gee was carrying out a similar survey on behalf of

Lord Abingdon, which as at Uffington was prior to enclosure. It seems wholly unlikely that someone employed in surveying would have had prior authority to instigate work on the scale of re-cutting the figure of the horse, and it seems rather more likely that not only the decision but also the idea originated with the fourth Earl of Abingdon, Willoughby Bertie (1740-1799). Not only was he obsessively enthusiastic about horses, horseracing, and started the Thame Hunt, but at the time of the new Westbury carving he was aesthetically overhauling his estates. Contrived landscapes were not just places to be seen, but places in which to be seen, so living at Wytham it seems likely that Lord Abingdon would at least be aware of the Uffington scouring of 1776, if not actually among the visiting county set attending it, and certainly if Abingdon's reputation in connection with horse racing is anything to go by, he would have found the prospect irresistible.

## GEORGIAN HORSES

The Revd. Plenderleath thought that the stimulus behind chalk horses was the artist George Stubbs (1724-1806), and in the mid-twentieth century Morris Marples considered the new chalk horses 'inspired' by an extension of Stubbs' horse painting in combination with the fashion for follies.<sup>10</sup> They were joined in their thinking by Ralph Whitlock, who thought Stubbs 'indirectly responsible for the rash of white horses'.<sup>11</sup> No particular painting was cited or indeed any similarity specified beyond the 'realism' of the later figures.

During this period there was of course an ongoing passionate enthusiasm for bloodstock, horse-racing, and hunting. The desire amongst English patrons for horse portraits can therefore be considered a sway in the creation of chalk horses. The success Stubbs enjoyed during the 1760s was not, however, repeated during the new chalk horse period.<sup>12</sup> This success had built on the enthusiasm generated by Peter Tillemans (d.1734) James Seymour (d.1752) and John Wootton (c. 1682-

1764).<sup>5</sup> Following this there is no known example of chalk horses appearing in landscape paintings until late in the following century, the contemporary relationships of hill figures instead being reflected in engravings produced in relation to estate management and topographical travel that were subject to antiquarian interpretation. It then appears that there was no interaction on behalf of hill figures with paintings as there was in the case of follies and ruins, which simultaneously appeared in gardens and paintings with each form encouraging the other, as would be expected when in some way interrelated.<sup>6</sup> Nor was there any apparent attempt, when cutting a chalk horse in the eighteenth century, to include subsidiary figures in the form of a rider, or a groom, or even a huntsman with hounds, as demanded by the fashionable penchant reflected in contemporary painting commissions. Not until the following century was the only rider added to a chalk horse, and that rider was George III, an attachment to the reigning and at the time very popular monarch being perhaps pointed in this respect.

Although horse hill figures did not directly arise or extend from horse painting, that does not mean an absence of connections with the art. The outlines of each of the new horses were in all probability modelled on a prior source, and as the horses are not seemingly based on a classic shape the most likely contemporary source is perhaps horse painters such as Stubbs. Modelling an outline for a chalk horse on a pose is not of course the same as claiming that the painting providing inspiration, but there are reasons to consider an element of Stubbs' work in terms of inspiration in connection with the new horse figures. A possible primary influence was the plain backgrounds that increased the commanding image of the horse in a number of Stubbs' works of the 1760s. This would include *Whistlejacket* (1762), which is often cited as the first painting to feature a horse against a neutral background, unencumbered by tack or other figures. It would also include the illustrations in *Anatomy of the Horse* (1766), since being published it was more readily accessible than contemporary paintings. There is also a more specific case to be considered, in that the outline of the

Westbury chalk horse when first carved in 1778 with its front feet together and full tail is uncannily close to the stance and outline of the main horse in the painting of c. 1762, Whistlejacket and Two Other Stallions with Simon Cobb, the Groom (Figs. 10-11).<sup>10</sup> Even if this painting was not on public display at the time it is of course possible that it was seen by Lord Abingdon, who had the Westbury figure carved, as his passion for racing was shared if not surpassed by the 2nd Marquis of Rockingham, who commissioned Stubbs upon purchasing Whistlejacket following an infamous race, then immediately retired the animal to stud."! Rockingham, twice Prime Minister during George III's reign, is said to have planned to have two other artists, each master in their particular discipline, complete the painting of Whistlejacket by Stubbs, each adding in turn the mounted figure of George III and the background landscape.'" For reasons unknown Whistlejacket as painted by Stubbs was never added to. It has been argued that the painting was originally planned as it is now seen, but a story arising from the impact of the painting on completion by Stubbs provides a possible explanation. Whistlejacket, a notoriously highly strung animal who reputedly could only be controlled by his groom Simon Cobb, is said to have glimpsed the realistic image and immediately attacked the canvas, forcing Stubbs to fend the horse off with his palette. If true this incident perhaps persuaded Rockingham to look at the canvas in a new light, and preserve it as it was. The year that the painting was completed, 1762, Rockingham was given the honour of naming the St Leger, and this was of course the year of many dedications, following George III's accession. The coincidence of this timing and legendary fame of Rockingham and Whistlejacket inevitably gave rise to stories linking this horse to the king, and there are reasons to consider this point alongside the origins of the 1778 Westbury White Horse.

Of the trend adopted by the new white horses of this period of facing left, Morris Marples suggested this was 'probably because that is what nine out of ten people would do if asked to draw a horse'.!'



While not an unreasonable consideration this ignores a tradition stretching back to John Aubrey, whereby horse carvings have been compared to the equine figures on early coins. When comparing the chalk horses of the modern period with contemporary coinage, it is instantly recognisable that not only do many of these coins depict a horse, but that it is specifically the Hanoverian horse which in every example of these coins faces left (Figs. 6-7).

Verstegan's horse banner accompanying Hengist and Horsa also faced left, and the accession medal of George I shows the Hanoverian horse set against a conventionally orientated map and in the action of leaping from Germany to England (Fig. 8).<sup>1</sup> Thus the royal coat of arms depicts this horse in the same direction facing left, and this image was adopted for the currency. This image appeared too on loyalty plaques bearing the royal coat of arms which were to be found in every church and a surviving example from the reign of George III can be found near the Westbury White Horse at Dilton Marsh. The symbol was adopted for the prized badge of the famous Doggett's coat and badge race, and there are of course numerous other contemporary tokens and medals with this same image. Dictated by this trait it is then unsurprising that chalk horses carved at this time faced left, and in respect of their design it should be recalled that the particular element focussed upon by Wise's tormentor Rusticus in his very public statement of mockery, was that the horse figure Wise was fétting in his pamphlet faced in the opposite direction to the Hanoverian white horse as it appeared on the royal coat of arms. Following this infamous episode, it would be an open invitation to ridicule or fierce criticism if any of the new horses were carved in the opposite direction to the royal coat of arms. It is in addition evident from the one exception to horses facing left in this period, that the Osmington horse faced right clearly because in depicting George III on its back it was already identifying itself with the obligated connection in another way, so had no need to conform in terms of direction and could break with this particular tradition.

The first of the new chalk horses at Westbury

was cut at the time of the king's fortieth birthday, and seven chalk horses are known to have been carved in England and Scotland during the reign of George III. By contrast, other than to mark the Regency within the time of George III, none was cut during the reign of his successor George IV, and only a few chalk horses appeared sporadically thereafter. The new chalk horses were perhaps therefore much more Georgian than previously recognised, and as James Ward's 1824 illustration of Adonis reminds us, a white horse was George III's 'favourite charger' (Fig. 9). By the time of George III's accession, the white horse had come not just to be synonymous with the House of Hanover, but to represent the king in person. This translation of the white horse as George III of course made more memorable those occasions where the king actually rode a white horse in public, such as when reviewing troops in Hyde Park on his birthdays, and when being used to pull Chambers's flamboyantly designed royal coach on state occasions. In these ways the white horse promoted the Hanoverians in the eyes of the public.

## CAUSE AND CELEBRATION

Shortly after Lord Craven introduced the new form of celebratory scourings on 27 May 1776, the Declaration of American Independence was issued on 4 July with its detailed denunciation of George III as 'a tyrant unfit to rule free people', and October 1777 witnessed the disaster at Saratoga, where in the war against America approaching 800 were killed and 6,000 forced to surrender on terms. At this point France and Spain entered the war on the side of America.<sup>10</sup> The impact of the news that the seas were threatened by the combined fleets of Spain and France, made all the more profound through the timing and words of Thomas Arne's *Rule Britannia* (1755),<sup>11</sup> makes it tempting to connect the first new horse carving with these stirring contemporary events (Fig. 16).<sup>12</sup> It has certainly been noted that from the 1770s Britain's rulers increasingly took over and developed the evolving language of patriotism, with the government demonstrating a lead in

presenting a united British nation from July 1776. Prior to this George III only sporadically bathed in the popularity he would enjoy after 1783, but, as Linda Colley argues, the realisation of an American Revolution, indeed the very idea of a war against 'erstwhile English Protestants' allied to the old and Catholic enemies France and Spain who threatened a siege, created an intense patriotic fervour that Colley sees reflected in the growth of the Society of Antiquaries between 1784 and 1807, when the membership more than doubled.<sup>10</sup>

In view of this background, and in the knowledge that coronations are the only known commemorative reason associated with any Wiltshire hill figure,<sup>10</sup> it follows that the dates of scourings and new horse carvings could follow a pattern reflecting monarchy-centred patriotism. The shape and direction of the new chalk horses, resembling the Hanoverian horse, represented allegiance not only to George III, but also to Protestantism, as reflected in Benjamin West's 1778 depiction of William of Orange on a white horse at the 'Battle of the Boyne'.<sup>11</sup> These new chalk horses, concentrated in the reign of George III, were also linked historically with monarchy through a believed association with Alfred the Great and ideas of an English nation. While it is a simple matter to find coincidental anniversaries to fit individual chalk horses, through such as the Cherhill Horse being cut in the year that the Epsom Derby was first run, with the Oaks dating from the year before, it appears there is a single trend paralleling the Uffington scouring events and corresponds with the cutting of the new horses. The details are set out in Table 2.

Table 2. Chronology of patriotic events coinciding with Uffington scourings and the advent of new chalk horses 1776-1838.

<u>Year</u>	<u>Event</u>
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1778	George III's fortieth birthday
1780	Twentieth anniversary of the accession

1783 Peace with USA  
1802 Peace with France  
1809 George III's Jubilee  
1811 Prince of Wales made Prince Regent  
1838 Coronation of Queen Victoria

#### Scouring New Horse

1776 1778  
1780 1780  
1785 1785  
1803 1804  
1808 1808  
1812 1812  
1838 1838

Sources: Thomas Hughes, *The Scouring of the White Horse*, (Cambridge 1859), pp. 106-117; Revd W.C. Plenderleath, *The White Horses of the West of England, With Notices of Some other Ancient Turf Monuments* (Calne, second edition 1892), pp. 18-36; Morris Marples, *White Horses and Other Hill Figures*, (London 1949); John Cannon (ed.), *The Oxford Companion to British History* (Oxford 1997).

Because in their design the new chalk horses pay homage to the Hanoverian horse, it is perhaps not a coincidence that each installation corresponded with dates of notable patriotic celebration; and as, excepting the first horse at Pewsey, the new horses were cut without initiating celebratory scourings the commemorative nature of the ornamentation was perhaps the most important element. Because the Uffington celebratory scourings, seemingly encouraging each equine carving in turn, foreshadowed or corresponded with expected celebratory events such as anniversaries and a coronation, while trailing events of unforeseen date such as declarations of peace and the Regency, this patriotic sequence appears all the more convincing.!" It is even unsurprising that this commemorative series, if deliberate, was discontinued and went unrecognised by the mid-nineteenth century, as the white horse movement can be seen to weaken alongside the failing health of George III. Although the Regency established in 1811 was perhaps denoted

by a scouring at Uffington and a horse was cut at Alton Barnes,' the movement appears to falter with George III's death in 1820. Scouring at Marlborough continued until the death of the headmaster in the 1830s, but the passing of the Catholic Emancipation Act 1829, which abolished the Test and Corporation Acts and enabled Roman Catholics living in Britain to lead full public and political lives, is alluded to by Hughes as in part the reason behind the lapse of scouring revels prior to 1838.

*"You see it was a transition time,' said he (the parson); 'old things were passing away. What with Catholic Emancipation, and Reform, and the new Poor Law, even the quiet folk in the Vale had no time or heart to think about pastimes : and machine breaking and rick-burning took the place of wrestling and backsword play'.*<sup>4</sup>

Hughes here separates a conscious decision by the landowners not to hold scouring revels during the period of Reform, from the direct action taken by 'quiet folk'. The suggestion is that scouring celebrations were not held because of a shift towards democracy, and the break in scouring revels was perhaps even longer and more pointed than Hughes makes clear. The newspaper report of the scouring in 1843 recalls:

*The last revel held here was five years ago, whilst previous to that there had not been one held for a period of nearly thirty years.'*

The 'thirty years' cited by the Reading Mercury perhaps reflects a failure to find any references to scouring in the newspaper archive over this period, as it appears that prior to Victoria's coronation no official scouring had been held since the reign of George III:

*...It seems that much interest has been excited in the Vale by the proposed revival on the 19th and 20th of this month of the rustic sports which formerly were held every 21 years on the 'cleaning' of this renowned steed ; and which in the more primitive West Country*

*days attracted a large concourse of gentle and simple from the neighbouring counties. Since the days of Fulwar Earl of Craven, the grandfather of the present nobleman, the revels have been disused.!°*

This 'revival' of the Uffington festival in 1838 was revealed by the Earl of Craven to be a dual celebration of the arrival of a Craven heir and Queen Victoria's coronation," revealing an outward symbol of royalist support. It is then perhaps no coincidence that the period in which scouring lapsed is characterised by the centrally organised and coordinated trends in national celebration that had emerged since George III's Jubilee, when the first large scale organised public celebration of royalty took place. The Court had demonstrated with the 1809 Jubilee and the coronation of George IV in 1821, that systematic centrally organised ceremonial state occasions could be managed in the interests of the monarchy and its interpretation of nation.' With public celebration of monarchy and nation becoming centrally controlled and widespread, the revels had perhaps outlasted their function in this respect.

After 1776, revels in association with scouring were no longer at the discretion of the people. The Earls of Craven and Abingdon each adopted a hill figure following estate surveys preliminary to enclosure,'? but where Lord Craven continued customary scouring and introduced celebratory revels to coincide with occasions of his choosing, revels tended not to be instigated alongside the newly introduced horses. Exceptions to this rule include the Pewsey horse, which was consecrated with revels (but this did not continue following objections in relation to rowdiness), and the Marlborough horse, where revels took place annually in what can be considered an example of the now traditional school sports day. Had revels been in the power of the people they almost certainly would have continued, as is evidenced in the writings of such as Thomas Hughes and Alfred Williams, and found also in newspaper reminiscence columns from the latter half of the nineteenth century into the inter-war period in the following century. These are typified by the

remembrances of William Morris (of Swindon), in being littered with fond recollections of festivals and games, and even Professor Stuart Piggott proudly recalled his incitement to archaeology being the story of his grandfather attending when a boy the last scouring and revels as recorded by Hughes.<sup>10</sup> This enthusiasm combined with the fact that hill figure revels failed to return despite scouring making a comeback in the late nineteenth century, confirms how little sway the majority had in connection with heritage.

From the list of scouring dates Hughes discusses back to 1776, there is one date which does not coincide with any event of national celebration. This date also stands out from this list for having no new horse cut in that year, and in addition was not held at Uffington but at Seven Barrows, more than two miles from the white horse. Underlining this 1825 event as an anomaly is the newspaper report stating that no official event had occurred for thirty year prior to 1838. Evidently the 1825 event was not a scouring in the traditional sense, and yet Hughes made a point of including it and further comments that it was 'the largest gathering that had ever been'.<sup>10</sup> Hughes poses questions to which he was unprepared to spell out the answers, his only suggestion being: 'Now you must find one out for yourself'.!

It is apparent that the 1825 event took place without the co-operation or consent of Lord Craven, and the choice of a remote downland location and size of the crowd promotes the suggestion that this may have been an underground event organised by the ordinary locals. If it was a revels or pastime it was not attached to an official scouring — from local newspapers there was no apparent reason prompting such an event, and the only national event of note that precedes it is the Repeal of the Combination Acts 1824. Following this Act and another in 1825 there was an upsurge in trade union activity, and as benefits clubs and friendly societies had been covertly used for this purpose since 1799, it is possible that this was an early example of the soon to arise organised club days.

Had the locals not held their own celebratory revels in 1825, it seems likely that this generation would never have witnessed another. Hughes mentions, 'machine-breaking and rick-burning',! and the Reading Mercury indeed stated that the revels had not been held since the days of Fulwar, William Lord Craven's grandfather. Fulwar played a prominent role in countermanding the Swing Riots. Chairing a meeting at the Duke's Arms Inn, Marlborough, on 22 November 1830, Fulwar took the lead by proposing the appointment of Special Constables and an application to Bow Street for an investigator. It appears the setting up of rewards on this occasion was also his suggestion, and a request for the deployment of troops he offered to write himself. Two days later Fulwar accompanied the Marlborough Troop of Yeoman Cavalry, swelled by some 200 mounted farmers, to Aldbourne to confront the crowd that had gathered in protest the previous day. The crowds did not materialize so it was decided, on whose authority it is not clear, to search from house to house. This resulted in over thirty people being arrested in Aldbourne and Ramsbury. Following this episode and in continuing opposition to protest, Fulwar joined the constabulary, sat as a magistrate, and was sworn in as one of those serving on the Grand Jury for the special assizes that crushingly reasserted the ruling élite's position and power.!''°

With normal service for the élite resumed, the 1838 scouring revival was held and proved such a success that another followed in 1843. The previous year was known for the 'Plug-plot' riots and the general strike, but the news had been dominated by several attempts on Queen Victoria's life and the resulting Royal Protection Act 1842.'° This unrest became an attempt to return to the Charter, and it was perhaps as much the failure of the second Chartist petition as the royal protection that launched the scouring revels of 1843.

CHRISTIAN SOCIALIST HERITAGE



Alongside a fading interest and the loss of contemporary Georgian identity, the image of the white horse was additionally pressurised through its fundamental association with Christianity, the traditional interpretation of which was now under sustained assault from knowledge arising from geological and archaeological discoveries." This pressure gave rise to extraordinarily professed reasoning in connection with ancient remains by those desperate to explain reality within the bounds of traditional faith. Just two years before the final scouring at Uffington the Revd. Baker described the Whiteleaf Cross as an 'almost spectral apparition of the sign of the Son of God'.! If a site could not be explained as Christian it held little interest, and was either a mere curiosity or was actually foreign and did not belong in England. This ascendancy of Christian and English heritage over anything considered foreign or non-Christian is illustrated by the order of seniority promoted in an early nineteenth century tour guide. In the Hermit's Tour (1826) 'in which the origin of the White-Horse, Abury, Stone-Henge, Silbury-Hill . . . is attempted to be ascertained', the Uffington White Horse features first in this listing promoting the ancient wonders where Stonehenge would have the ascendancy today." Even as late as the debates raging over the introduction of the Ancient Monuments Protection Act in 1882, Stonehenge and Avebury were regarded as interesting oddities rather than homespun heritage. No-one denied Stonehenge and Avebury were wonders, but outside a minority they were considered foreign objects that did not belong in a Christian country. In being considered pagan and foreign, the stone circles were held subordinate to the Uffington White Horse that was believed to be Christian yet older and more important than Uffington church, the celebrated 'Cathedral of the Vale'. The enthusiasm for remains believed to be both Christian and English whilst apathetic towards remains that were considered neither Christian nor English, was summarised in *The Scouring of the White Horse* by Thomas Hughes, in an exchange between an antiquary and himself that he describes entering in

shorthand in his notebook:

*One wouldn't care so much about it if it wasn't made by the Saxons and their great King. The Druids don't seem akin to us somehow .. '*

Believed steeped in Anglo-Saxonism and Christianity, hill figures were a cornerstone of England's historic identity," and as a result evidence in relation to the actual age of the Uffington horse had been ignored for hundreds of years. Even as late as 1846, William J. Thoms was suggesting that the Uffington White Horse was cut as a Saxon memorial on their conversion to Christianity. Thoms, however, added a late postscript in the form of a letter from J.Y. Akerman suggesting the Uffington White Horse was of 'Celtic origin':

*The figure of the White Horse at Uffington appears to be one of the rudest of its kind, and so strongly resembles those on the more barbarous British coins, that I do not hesitate to class it with the same period.'*

Akerman's timescale would eventually be adopted, although that would not come to pass for at least another decade, as it would have to be absorbed alongside understanding in relation to theological anomalies. This delay was created by England having remained in a vacuum from advances in continental scholarship long after the end of the Revolutionary and Napoleonic Wars, and subsequently failing to catch up with philosophical and theological movements in Germany that had long come to terms with historical anomalies thrown up between archaeological discoveries and literal translation of the Bible. Thus is highlighted one of England's great historic ironies in that, having adopted a Germanic national identity, England was isolated from the German scholars who had made important far-reaching advances, because few English people could read German.

The extended period of isolation from the continent resulted in a continued obsession with artificial theories. These were a source of intense frustration to Dr Robert Herbert Brabant, a retired

medical practitioner living in Devizes, who much earlier in the century had conversed on the subject with such as Samuel Taylor Coleridge. Brabant, who could read German, had long been aware of the advance of German scholars and planned a study to overcome superstition and religious dogma and replace it with a form of early Positivism. To this end Brabant induced Mary Ann Evans, who could also read German, to live with him as a research assistant.' Brabant's invitation was perhaps a contrivance to pursue an intimate relationship, however, as he failed to advance his work and instead merely berated those who expounded theories contrived to fit with their ingrained beliefs. The relationship ended when Brabant's wife ejected Mary Ann from the house. Upon this Mary Ann immediately launched herself into a translation of David Friedrich Strauss's *Das Leben Fesu* (1842), published as *The Living Jesus* in 1846.' Strauss had evaluated the gospel as if an ordinary historical account, and in doing so accentuated ambiguities and questioned accuracy.'" By 1854 Mary Ann had also translated L. Feuerbach's *The Essence of Christianity*,<sup>9</sup> and through such translations England's intellectual isolation from the continent continued to thaw. In 1858, the year after the final scouring at Uffington, the Oxford academic Max Miller was able to state of England and Germany that 'in recent times the literature of the two countries had almost grown into one'."

Mary Ann Evans changed her name to George Eliot and, becoming a successful novelist, drew on her experiences in writing *Middlemarch* (1871). This novel is set in Coventry immediately prior to the Reform Act 1832, and features the fictional Revd. Edward Casaubon, who is obsessively consumed with obsolete researches as he cannot read German. The surname it appears was taken from Isaac Casaubon, the classical theologian buried in Westminster Abbey whose son Meric was the Saxonist prebendary of Canterbury Cathedral, and the early introduction of Casaubon in Eliot's bestselling novel confirms that a contemporary audience was very familiar with both this time-warp character and the message of Positivism that is

evident.!””

The quandaries troubling the first half of nineteenth-century England were somewhat illuminated when the term pre-history abruptly entered the English language in 1851.<sup>7</sup> The evidence had mounted and was so irrefragable that in direct contradiction of centuries of Christian belief in England, an indefinite time period had to be added before English history officially began.

White Horse Revel. This famed revel is now approaching as it will be held at the latter end of the present month. There cannot be a place more celebrated for a rustic festival than White Horse Hill. It is a delightful rural spot, and from the summit of the hill an extensive view will be obtained over all the surrounding counties. The last revel held here was five years ago, whilst previous to that there had not been one held for a period of nearly thirty years. The amusements will be numerous and novel, all the old English pastimes being intended to form a prominent part in them. We understand that the contributions are liberal, and the prizes will be very good. The White Horse Hill is within two miles of Uffington, and about four miles from Faringdon Road and Shrivenham stations on the Great Western Railway.”

With the arrival of the railway age the number of unearthed archaeological discoveries increased,”” and as the white horse and its associated quaint rustic customs appeared more dated than ever, the scouring ritual had become seen by Hughes as an increasingly important way of retracing the near past and its echoes of times before. The scouring ceremony represented living history that was in danger of disappearing alongside the village feast, and as Hughes expressed through *Tom Brown*, the nation was likely to ‘find some better substitute’.

*Don't let reformers . . . think that they are going really to lay hold of the working boys and young men of England by any educational grapnel whatever, which hasn't some bona fide equivalent for the games of the old country 'veast' in it. Something to put in place of*

*the back-swording and the wrestling. . . Life isn't all beer and skittles; but beer and skittles, or something better. ..must form a good part of every man's education.*

Through his novels Hughes presented an argument, not just for the continued maintenance of the Uffington White Horse, but for a future utopian Christian English society that included holiday opportunities for ordinary people and the retention of games in a muscular Christian tradition. The Christian socialist movement, in which Hughes played a leading role alongside Charles Kingsley and Frederick Denison Maurice, had collapsed in 1854, having been crushed between the forces of Conservatism and the forlorn hopes of workers' leaders to return to the Charter. Later that year Hughes, Kingsley, and Maurice founded the Working Men's College, and were assisted by the teaching by John Ruskin and Sir John Lubbock, who would become President. In 1856 Hughes completed *Tom Brown's Schooldays*, and the following year returned home to Uffington, a meeting being held at the Craven Arms on 20 August to decide that in one month 'a pastime be held on the white Horse Hill on Thursday and Friday 17th and 18th of September 1857'. While there is no doubt that the Earl of Craven entered into the spirit of the occasion, it is clear that the drive and organisation behind the 1857 scouring was a committee.<sup>17</sup> This was headed by Edwin Martin Atkins (1808-1859) who had directed an archaeological dig at Dragon Hill in 1852, but indicative of a quite different game being played to any revels event the committee also included the Secretary of the Society of Antiquaries, John Yonge Akerman, who is recalled as the writer of the letter to *Archaeologia* that would finally establish the accepted age of the Uffington figure amongst archaeologists.<sup>18</sup> The antiquary in Hughes's novel of the scouring is apparently based on Akerman, the part of the scribe on the author of course, and it seems the squire was based on Atkins and the parson possibly on Hughes's brother John, who was vicar of a neighbouring parish.<sup>19</sup> The novel format of the book has been seen as a source of frustration, as a straightforward report of events

accompanied by a traditional history would have been easier to interpret, but in addition to providing an accessible and readable account for the public, it allowed Hughes to disseminate to a wide audience what he felt had not been heard through a series of journals, including the recently failed Christian Socialist.

It may be found that the scouring of 1857 was not in origin Hughes's idea, but as an experimental exercise in Christian Socialist propaganda it undoubtedly was. This was an archetypal attempt to intervene between the church, which was endorsing religious collateral by safeguarding the position of the rich, and the increasingly organised working class, to ease hostilities and bring about a society based on the Kingdom of God.'" The arguments are gently played out through the chapters of *The Scouring of the White Horse*, and 'The Sermon' attached by Hughes as an appendix provides a summary — albeit a long-winded one. Opening with a quote from Leviticus (xxiii. v. 1, 2.):

*'These are my feasts,' said God to the nation He was educating; 'keep these feasts they are mine'. . .*

Hughes argues through the parson that feasts were holidays, 'for the whole nation — for the rich and the poor', that the Queen's birthday was the only national holiday, and all the other feasts should be celebrated and kept as national holidays, including the main Christian festivals and local parish feasts. He further argues that these holidays should be celebrated as Christian and English. The Queen's birthday, he states, 'we keep as Englishmen but not as Christians', 'while Christmas, and Easter and Whitsuntide 'we keep as Christians and not Englishmen'. This would be achieved, the parson suggests, by a service being held in attendance at all these feasts, and this would in addition raise the tone of the occasion and make these holidays into occasions for forgiving and forgetting as well as moderation. Hughes, who doubled as the sparring master at the Working Men's College, did not of course overlook the part muscular

Christianity had to play, and includes the argument that athletic sports teach preparedness, restraint, and endurance, whilst being noble and character forming.<sup>10</sup> He added the provisos that games should not be left in the hands of publicans, and that money prizes should be avoided.

Hughes's arguments were backed up a decade later, when the clergy of the Rural Deanery of the Vale of the White Horse (including Hughes's brother John) sent a letter to Lord Craven asking not only for the restoration of the hill figure but an accompanying celebration that would also be 'conducive to the interests social and moral of the neighbourhood'.<sup>11</sup> In some respects what Hughes was arguing for gradually came to pass. Thanks to his friend Sir John Lubbock Bank Holidays were introduced. Through his public school contemporaries codified games replaced such as backswording. The church popularised itself by adopting Harvest Festivals, and church fêtes maintained elements of tradition that might otherwise have been lost.

The original edition of Tom Brown's Schooldays (1857) was a plain volume without illustrations, owing to it being written by an unknown author. But the strength of its success saw Hughes's new novel, *The Scouring of the White Horse* (1859), launched as one of the lavish new Victorian illustrated and engraved books, another example of which was H.W. Longfellow's *Song of Hiawatha* (1855). These engraved books are much sought-after collector's items today and the first edition of *The Scouring of the White Horse* is a particularly attractive example of a lavish format that proved popular at the time, although when first published Hughes's book met with little success.<sup>12</sup> Where Tom Brown's Schooldays continued its best selling success from launch through successive editions to become one of the greatest selling books of all time,<sup>13</sup> *The Scouring of the White Horse* failed to sell much beyond advance orders.<sup>14</sup> This was despite an advertising campaign which emphasised that this was the new novel written by the celebrated author of Tom Brown, and the added attraction that the new book was

published in an innovative form (Fig. 17). Hughes's novel eventually found an increased popularity later in the century, which suggests that its initial lack of success may not have been so much due to the content as the timing of its publication. The Scouring of the White Horse was published in the same year as On the Origin of Species. Charles Darwin's book is often held aloft as representing a crest on the scientific wave breaking the ecclesiastical yoke, although this of course is a myth. The supposed Darwin Revolution, as is now recognized, did not reverse belief in Christianity at all, let alone overnight.' What did suddenly halt, however, was the obsession with origins that characterised archaeological enquiry in the first half of the nineteenth century, as this was tied to demonstrating the believed truth of Christianity. When the basis of religious truth was ultimately questioned, the quest for origins immediately plummeted and scouring disappeared in its wake. As Philip Schwyzer concluded in his incisive "The Scouring of the White Horse: Archaeology, Identity, and "Heritage""', the preoccupation with origins disappeared as the association with Christianity became increasingly compromised, 'by wider recognition of the similarity with images on British coins among archaeologists'." Hughes's publication appeared at booksellers, therefore, just as such prior obsessions with origins and associated attempts to translate ancient monuments as Christian became outmoded.'

The white horse was now victim to the attitudes of the ruling élite towards monuments suspected of being Celtic. Whilst believed Christian, the white horse supported the religious collateral maintaining the relative position of rich over poor. A Celtic Pagan monument served no purpose to the ruling élite, and if anything could be used in arguments that could constitute a threat. Illustrating the continued hostility of the influential electorate to ancient monuments in the decade following the final scouring Sir John Lubbock, a prospective parliamentary candidate at the imminent election, was warned by his agent to delay publication of Prehistoric Times (1865), as the inevitable confrontation with traditional Christian approaches



would see him lose votes. Lubbock ignored this advice and the subsequent drop in votes resulted in defeat. The electorate of 1865 was not ready to elect to Parliament anyone associated with ideas of prehistory," despite Lubbock making clear that:

*Many writers who have been by no means inclined to raise objections against the authority of the Sacred Scriptures . . . have felt themselves embarrassed by the shortness of the period (B.C.)."*

Lubbock was eventually elected in 1870 having immediate and rather surprising success in introducing Bank Holidays the following year, maintaining that if they had been called public holidays MPs would have too readily recognised what they represented and voted them out. By this time Lubbock's Prehistoric Times was on its way to becoming the bestselling archaeological book of all time. The future Lord Avebury was President of the Working Men's College and sponsored early closing legislation, but the distaste for monuments believed pagan and foreign remained to draw out his fight to establish ancient monuments protection.

In the year that Bank Holidays were introduced Middlemarch was published, and Thomas Hughes presented an address to the Newbury and District Field Club on the 1000th anniversary of the Battle of Ashdown."

*I am afraid I must now run the risk of shocking many of you by admitting the actual site of the battle is not so precisely ascertained as all good Berkshire folk have been want to believe....Nor am I sure, and this is perhaps greater heresy, that our White Horse was cut out of the hill after the battle. Indeed I incline to believe that it was there long before...*

Hughes was now convinced that Alfred could not have 'spent an hour on this work in the crisis of 871', but despite having indicated in the Scouring of the White Horse that his feelings would not be the same were the figure proved to be pagan, he clearly remained passionate about the figure, and its

uncertain future troubled him deeply.' The Earl of Craven was by this time in receipt of letters from field clubs urging a return to scouring,' and the Newbury and District Field Club reported that he intended to instigate a scouring in the September of either that or the following year.' It did not take place, but the reintroduction of scouring at other chalk figures did start in 1873. Westbury White Horse proved once again a benchmark, having last been scoured twenty years previously. Economic forces were brought to bear, and Plenderleath was asked if there was any objection to re-cutting the Westbury figure so as to enable it to be permanently outlined with kerb stones. His reply demonstrated disdain:

*Mr Gee's horse appeared to me to enjoy the same security against injury causable to restoration as did Juvenal's traveller against loss by robbers when his purse was already empty.'"*

The restoration was thus executed with approval, and the change in the outline and shape of the horse was dramatic (Figs 12-15). In the same year a more sympathetic scouring was reintroduced at Marlborough, the cost of the work being covered by an ageing Captain Reed, who claimed that as a schoolboy he had taken part in the creation of the figure. Wilmington Long Man was restored in 1874, then two years later the restoration of Cherhill White Horse took place, and the Kilburn Horse was restored in 1887. Amid these other restorations, further pressure to scour Uffington White Horse arose with the proposed unveiling of a statue of Alfred the Great at Wantage in 1877. It was perhaps this that caused the landowner to acquiesce, as a booklet published to accompany the unveiling announced that the Earl of Craven 'intends to revive the old custom'.' The scouring of a 'pagan and foreign' monument was still not acceptable, however, for the return of scouring, forecast in the commemorative White Horse Hill and Its Surroundings, was accompanied by a dismissal of Thomas Hughes's then recent conclusion that the hill figure was pre-Saxon, due to Alfred not having

time to carve a monument, by retorting:

*As if monuments of great victories on which depended the existence of nations had never been erected years after such battles were fought."*

Despite the confidence conveyed in the commemorative booklet, scouring was still not reintroduced at Uffington. Twenty years had now passed since the last scouring, and it was a decade since the Bath Field Club complained that the horse was 'almost obliterated'." In 1880 Plenderleath reported the figure 'so overgrown with weeds as scarcely discernable from a distance', but only following the death of the 3rd Earl in 1883 did scouring at Uffington once again take place. As at Westbury, however, scouring at Uffington was not as before, being neither of the old standard nor exacted with the old enthusiasm. The 1884 scouring at Uffington was carried out only begrudgingly, it seems, and another in 1892 was so inadequately executed that the figure was overgrown when visited by the British Association in 1894.?' Hughes is alleged to have argued that the landowning family had believed itself relieved of any responsibility following the passing of the Ancient Monuments Act, but as can be judged from the example of Stonehenge in this same period, issues in relation to private ownership were not so straightforward." Following the colonisation of Salisbury Plain by the military at the end of the century, the white horses that survived on the hillsides of Wiltshire were joined by regimental badges carved during the Great War. The Fovant Badges all but faded in the inter-war years until Regimental Association funds and the goodwill of local workers intervened to maintain them. The restoration of these figures helped to renew enthusiasm for the white horses, and soon a new horse was cut at Pewsey 'for the coronation' in 1938. The Devizes 'Millennium' horse has now joined the stable, and breaking with the Georgian tradition is the only new horse in the county facing right." Rejoining the stable, the right-facing Tan Hill Donkey reappeared in the frosts of November

2004 (Figs. 18-19; see [www.wiltshireheritage.org.uk](http://www.wiltshireheritage.org.uk)).

Restoration became the treatment for all old buildings during the twentieth century, with even common housing stock joining castles, churches, and country houses as nationally adopted built heritage. Yet prior to the nineteenth century, the only monuments to receive regular restorative attention were hill figures — maintained by the people for the people, this was heritage in which everyone could revel.

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## **IS THERE A TRANSFORMATION OF SEX IN FROGS?**

by PROFESSOR W. W. SWINGLE  
Osborn Zoological Laboratory, Yale University  
from the Jstor etext of THE AMERICAN NATURALIST  
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This paper is a reply to the recent article of Dr. Emil Witschli which appeared in a late issue of the Naturalist (Vol. LV, No. 641). Witschli is quite convinced that the problem of sex development and differentiation in frogs has been settled, and that nothing further remains to be

said. However, the writer feels that instead of being solved, the time has come for a revision of the entire question of sex development in Anurans, and that the subject is ripe for a reinterpretation upon a more rational basis than that accorded to it heretofore.

The first portion of the paper will be devoted to a brief exposition of the writer's interpretation of sex in frog larva based upon data obtained from a study of the bullfrog. The second part of the paper is a reply to certain questions raised by Dr. Witschi.

In larval males of the bullfrog two gonads are formed, just as there are two kidneys formed, a pro-testis or embryonic sex gland destined to degenerate and disappear in ontogenetic development and a definite or functional testis which replaces it. The germinal elements of the pro-testis arise in the entoderm and migrate into the germ ridges early in embryonic life. The cells multiply rapidly and together with the mesodermal elements of the germ glands form paired ridges projecting into the coelomic cavity. While the tadpole is very immature and has yet a year of larval life before metamorphosing, the germ cells of the pro-testis undergo a precocious and abortive sexual cycle culminating in degeneration and resorption. Beautiful cysts of spermatocytes are formed, but the first maturation division rarely proceeds past the anaphase owing to fragmentation of the centrosome and consequent formation of polyasters (Fig. 1). Sometimes aberrant spermatids are formed by suppression of the first and second maturation divisions and growth of axial filaments from the centrosome. Practically all the germ cells of the pro-testis degenerate and disappear while in various stages of maturation— some undergo an oviform type of degeneration, i.e., hypertrophy enormously and take on the superficial characters of oocytes. The oviform type of degeneration, however, is more characteristic of the short larval-lived frogs than of *R. catesbeiana*, for in many animals these large cells appear rarely and in others not at all and this is an important point to keep in mind. This type of degeneration will be discussed in detail in a later paper ; suffice to say it gives no clue to the sex of a cell. (See Plates 1 and 2.)

Fig. 1. Transverse section pro-testis *R. catesbeiana* tadpole. Animal has a year of larval life remaining. A, Spermatogonia showing nuclear polymorphism clue to incomplete fusion chromosomal vesicles; B, Final spermatogonia; C, Spermatocytes in leptotene stage ; D, Amphitene and pachytene ; E, Heterotypic mitosis 1 ; F, Secondary genital cavity; G, Anlage of sex cords of definitive gonad which develops as a core within pro-testis.

Some cells of the pro-testis fail to take part in the abortive sexual cycle persisting through the phase of maturation and degenerate as spermatogonia. These elements migrate into the sex cords (Fig. 1, g) which have^ formed meantime, and form a core of germinal tissue; extending through the center of the pro-testis. This core; of tissue plus the sex cords is the anlage of the definitive; testis and is quite distinct from the pro-testis, the cells of which are maturing and degenerating, whereas the cells of the forming functional gonad remain as primitive spermatogonia. The definitive testis by rapid growth completely supplants the pro-testis which usually disappears some time before metamorphosis. The functional gonad is generally fully formed at metamorphosis when the larvae are two years of age. Some tadpoles, but not all, develop ripe spermatozoa in the gonad at metamorphosis due to a second sexual cycle of the germ cells of the definitive gonad. (Swingle, '21, Jour. Exp. Zool., Vol.32.)

In the frogs with short larval-life the same succession, of gonads occurs, but in these forms the developmental processes are greatly accelerated and the pro-testis maturation cycle is- cut 'short by the cells early becoming senescent and undergoing oviform degeneration i.e., hypertrophy to such an extent as to superficially resemble oocytes. This oviform degeneration occurs to an even more marked degree in the progonad of the toad which has a still shorter larval-life, e.g., in Bidder's organ. In male anurans the entire pro-testis or larval gonad is the homologue of the male organ of Bidder in *Bufo*.

The pro-testis of the short larval-lived frogs has been misinterpreted as an ovary owing to the oviform-type of degeneration characteristic of many of its senescent cells, and hence tadpoles are said to develop first as females, fifty per cent, later transforming into males. The normal embryological process by which the definitive testis develops as a central axis through the degenerating pro-testis or larval Bidder's organ, has been described by Witschi as the transformation of female tadpoles into males. In *R. catesbeiana*. where the larval life is prolonged over two years, the true nature of the pro-testis is revealed, for relatively few of the cells are of the oviform type and all transition stages between such cells and normal spermatocytes occur. The evidence presented by this material will be published in due time, and is too clean-cut to admit of any doubt that the entire larval gonad of male anurans is simply an embryonic male sex gland rudiment and not a temporary ovary.

Witschi 's Fig. 6 (this journal, Vol. LV), which he supposes is an ovary transforming into a testis is simply a transition stage in the development of the definitive testis, and degeneration of the pro-testis or Bidder's organ in a short larval-lived frog. Compare his Fig. 6 with Fig. 1 of this paper and note how the true male character of the cells of the pro-testis comes out in *Rana catesbeiana* tadpoles.

When the facts are considered it is evident that the transitory gonadic rudiment of male frog larvae is an organ of Bidder which degenerates and is replaced by the definitive gonad. Any one who has studied the oviform-like cells of the so-called sexually intermediate tadpoles and compared them with the cells of Bidder's organ in male toads, is at once struck by the remarkable similarity in their origin, development, structure and fate in the two groups. They are identical. The crux of the problem is the nature of Bidder's organ in male Bufonidae and of the oviform-like cells of the pro-testis. The advocates of sex transformation have assumed that such cells are undoubtedly female, but no proof has ever been advanced that they are. Their ultimate fate is the same as that of the first year spermatocytes 1 in the bullfrog tadpole — degeneration (see Plates 1 and 2). The sex-transformationists have been misled by the idea that everything superficially resembling an oocyte is necessarily such, or that any cell in tadpoles and first-year animals undergoing the early growth stages, leptotene, pachytene, etc., is to be regarded as female. These are fallacious criteria. Enormously hypertrophied oocyte-like cells which have passed through the early growth stages and entered the "germinal vesicle" period so characteristic of oocytes, occur as normal features of the male sexual cycle of certain animals, e.g., myriapods (Figs. 5-8). These animals were at first regarded as hermaphrodites by Blackman (1905, Bull. Mus. Comp. Zool., Harvard, Vol. XL VIII, no. 1) who found upon examination, however, that these "-oocytes" were in reality spermatocytes: of giant proportions, and developed into spermatozoa. The writer has examined some of Professor Blackman 's material and the oocyte-like character of the male sex-cells is remarkable. In the material examined these cells practically fill the gonads. Firket, 1920, working on the chick embryo, describes and figures spermatocytes undergoing oviform degeneration, i.e., enlarging to such an extent as to resemble oocytes. There are many other cases reported in the literature. How does Witschi know that the transitory oocyte-like cells he describes in the future male tadpoles or so-called hermaphrodites, are female

cells and not senescent organ of Bidder cells occurring in the course of the abortive and degenerate sexual cycle of an embryonic pro-testis?

The work of Witschi on the problem of sex in anurans can be summarized thus: He has described in great detail and with admirable exactness the process of development of the pro-testis or Bidder's organ in the short larval-lived frogs, its degeneration and final replacement by the definitive gonad. This process he calls transformation of females into males. The experimental investigations of Witschi upon sex transformation by environmental influences consists of this : By means of such agents as heat or cold, etc., he has simply modified the normal course of development of the pro-testis — Bidder's organ, thereby accelerating or delaying the development of the definitive testis. The experimental results show that it is possible to modify the developmental rate of the embryonic testis. Similar experiments carried out with regard to other larval structures would unquestionably give similar developmental modification. Cold hinders metamorphosis and all the normal structural changes metamorphosis implies. All of these environmental influences are interferences with the normal cycle of the gonads, by which the development of the definitive gonad out of the pro-testis is accelerated, retarded, or possibly prevented entirely. The following quotation from Witschi '14, page 10, is significant in this connection:

*Bei seinen Untersuchungen war es Hertwig aufgefallen, dass unter dem Einfluss verschiedener Ausselebedingungen sich nicht nur die Geschlechtsziffern, sondern oft auch in ganz auffälliger Weise der Rhythmus, in welchem die Keimdrüsen und manche andere Organe sich anlegen und entwickeln.*

It is probable, judging from certain experiments reported, that the degree of development attained by the larval gonadic rudiment, its position in relation to the definitive gonads, its period of persistence, non-formation in some forms, and such like, may vary in different frog species and is determined by heritable factors. For example, in Bufo the structure persists throughout life in males, disappears after two years in females, and is anterior to the functional gonads. In frogs it forms the outer husk of the germ gland enclosing the centrally developing functional testis and may or may not show the oviform type of degeneration, e.g., R. catesbeiana.

If sex is so labile in tadpoles and young frogs, and females so readily transform into males under environmental stimuli, why is it that such sex reversals do not



occur in adult frogs after the degeneration of the pro-testis and the formation of the definitive testis has occurred? All investigators are agreed that the sex ratio of adult frogs of all species reported is approximately 50-50. If environment (ever changing in the same locality, and never the same in different regions), plays such an important sex transforming role, why do male tadpoles never transform into females — all investigators agree that they do not. Why do only fifty per cent, of the so-called larval females transform into males if they were not zygotic males from the beginning, and why do not all female frog larvae transform into males instead of only fifty per cent, if such transformation is possible? Appeal cannot be made to Professor Hertwig's well-known late fertilization experiments because in these experiments the influence of the over-ripeness of the egg upon the zygotic conditions determining sex are unknown. Hormones! To date there is no positive evidence that such secretions have ever actually changed a female germ cell into a functional male germ-cell.

Cases of hermaphroditism in adult frogs are thought by some to furnish evidence of a sex transformation in frogs. However, true hermaphroditism in adult frogs is as rare a phenomenon as it is in mammals when we consider the few recorded cases, and the enormous number of frogs annually dissected the world over. Crew ('21), *Journal of Genetics*, Vol. II, no. 2, has summarized the recorded cases of abnormal sexual organs in frogs and states that there are forty cases. To this number should be added a recent case described in the bullfrog, making forty-one. Among these forty-one cases, there are but twenty-seven true hermaphrodites. Crew's cases, twenty-one to thirty-three, inclusive, are not hermaphrodites, nor is case thirty-eight, as none of the animals possess ovotestes and some are entirely without gonads. True hermaphroditism in frogs is a permanent and pathological condition, probably due to a mix-up in the genetic constitution of the individual, and is not to be confused with the present problem which has to do with a normal but transitory embryological process.



Much has been written about the marked "sex tendencies" of various portions of the gonads in so-called sexually intermediate frogs, i.e., females transforming into males. It is claimed that the outer rind of the gonad exerts a profound female sex influence, while the inner portion exerts a purely male influence. Germ-cells remaining in the outer husk (the main portion of the larval gonad by the way) of the gland are female, those migrating into the central part among the sex cords become male. All such speculations are based upon misinterpretations. The outer portion or husk of the larval male gonad is simply the pro-testis, the cells of which are undergoing a precocious maturation cycle just as they do in the organ of Bidder in *Bafo*, the inner portion or sex cord region is where the definitive gonad begins development and as it spreads and grows the embryonic male gonad degenerates and disappears. It is in the region of most marked "female" tendencies that the writer finds in the bidlfrog entire cysts of unmistakable spermatocytes, and occasional spermatids (Fig. 1, e). In other words, the pro-testis — what Witschi regards as an ovary — can in the bullfrog, where its development is greatly prolonged, give rise to practically mature male sex products. Recently, the writer made an observation of considerable interest. In the degenerating Bidder's organ (pro-testis) of a two-year-old male larva in which formation of the definitive testis had been delayed until metamorphosis and in which the oviform type of degeneration was the most marked of any animal yet observed, several cysts of unmistakable spermatocytes and spermatids were observed. They arose from the maturing cells of what Witschi regards as the female part of the gonad — in reality the pro-testis, and were of the cell type characteristic of the adult frog. This observation shows two things clearly: (1) That the direct descendants of the male primordial germ cells {pro-testis elements) can produce practically mature germ cells; (2) that the spermatocytes of the structure regarded by the writer as a pro-testis are really male cells, and that the structure in so-called sexually intermediate frogs and tadpoles is in no sense to be regarded as female in character.

Another point is of interest here — the writer has never observed direct testicular development in *R. catesbeiana*, though it probably occurs in some strains; the indirect method alone has been found, e.g., first a pro-testis is formed which is later supplanted by the definitive gonad. In the bullfrog, which has the longest larval life of any anuran, the pro-testis persists longer than in other forms, sometimes two years before giving

place to the definitive gonad. What the writer calls a pro-testis of so-called sexually intermediate tadpoles is according to "Witschi a transitory ovary. If this is true why is it that despite its persistence for such a long time, relatively few oocyte-like cells are found in *R. catesbeiana* and in many individuals none, throughout a two-year period, but instead the structure produces spermatocytes and sometimes spermatids? Why is it, if this structure is an ovary in the so-called females that later transform into males, that the shorter the larval life of male anurans, the more the pro-testis in its structure and behavior resembles the Bidder's organ characteristic of male toads, due to rapid oviform degeneration of its cells; the longer the larval life, e.g., *Rana catesbeiana*, the more the germinal elements undergo a normal sexual cycle characteristic of male cells? The answer is, because in forms with extraordinary prolonged larval lives the true nature of the embryonic male gonad has sufficient time to manifest itself before being supplanted by the definitive gland.

"We come now to a discussion of the nature of Bidder's organ in *Bufo*, for this is the classical example of oviform degeneration of racially senescent germ cells. Heretofore, this embryonic sex gland rudiment has been regarded as characteristic of toads, but such is not the case. In frogs the pro-testis or larval gonad is a Bidder's organ, destined to be replaced by the definitive male gonad developing within ; in male toad larvae on the other hand, the functional gonad arises behind the pro-testis or Bidder's organ, consequently this structure persists as a degenerate gonadic rudiment attached to the functional gland.

According to the writer's view, Bidder's organ in *Bufo* is simply a vestigial larval gonad persisting throughout life and has the same sex as the definitive gonad behind it — male in males, female in females. It is just as though the pro-nephros of tadpoles persisted as a non-functional and degenerate rudiment at the end of the mesonephros. That many such larval and embryonic rudiments do persist through adult life in various animals is a commonplace of embryology, and their persistence in one species and total disappearance in another related one, is also well known. Bidder's organ in *Bufo* then, is a persisting, in frogs a transitory, embryonic sex gland rudiment, a relic of a phylogenetically earlier sexual condition. The functional gonads are more recently acquired structures (like the larval mesonephros) superimposed upon the older degenerate glands. Briefly

stated, the evidence for the view that Bidder's organ is homologous to the pro-testis of frogs and that it is not a rudimentary ovary except in female animals is as follows :

1. The cells of Bidder's organ in Bufo are unquestionably germ cells. The gland appears very early in embryonic life (two weeks after hatching) and its cells far outstrip in development the cells of the definitive gonads located posteriorly.
2. The cells of Bidder's organ extremely early in development undergo a precocious and abortive maturation cycle and become senescent and degenerate oocyte-like structures when the germinal elements of the functional gonads have barely started to multiply to form the definitive glands. This occurs in individuals of both sexes.
3. The larval maturation cycle such as occurs in the bullfrog, and in other anurans, throughout the entire larval gonad is confined to Bidder's organ in Bufo, and the changes occurring in this structure do not affect the normal developmental cycle of the definitive germ glands behind.
4. The -so-called transformation of female animals into males, claimed by Wrtschi and others to be the normal course of development in frogs, does not occur in toads. Why? Because in Bufo, the definitive gonads are from the beginning located posterior to Bidder's organ, and it is not necessary in order that they may develop that this structure degenerate and disappear as is the case in frogs where the definitive testis starts development as a core within the pro-testis or Bidder's organ, necessitating its complete destruction.
5. Few have ever claimed that sex in toads is labile and easily reversed by environmental influences. "Why? Because the sex of the definitive gonads is definitely fixed and clear cut at an early stage of life. The separation of Bidder's organ and the gonads has precluded the possibility of confusing the pro-gonad and the definitive gonad.
6. Bidder's organ is merely a persisting embryonic gonad whose cells have undergone oviform degeneration. It is not a rudimentary ovary except in female animals. This, is indicated by its presence in both sexes in toads; its presence in Spengel's case of true hermaphroditism;

Try the fact that neither in male or female of toads do its cells develop into true functional eggs ; and by its degenerate structure from its inception in both sexes.

In a recent paper (Zoologischer Anzeiger, Dec, 1921) Harms describes marked hypertrophy of Bidder's organ following testis removal. He considers that castration of males causes Bidder's organ to develop into an ovary. However, it should be noted that such operated animals with hypertrophied Bidder's organ (ovary according to Harms) retain all their male secondary sex characters, and their normal mating instincts and that these male characters and instincts undergo a normal cyclical development in such induced " females." When Harms removed both testes and Bidder's organ the somatic sex characters and instincts failed to develop, showing clearly that Bidder's organ in male toads acts like a testis in maintaining the secondary sexual characters. This is excellent evidence for the writer's view that in male toads Bidder's organ is simply a persisting embryonic male sex gland rudiment and not an ovary. If it is an ovary why should it develop and maintain the secondary sex characters of the male in absence of the testis ?

7. Recent investigators have inclined to the view that this structure is a hermaphrodite gland, i.e., in male toads a rudimentary ovary, in females a rudimentary testis. If this is true then the admission is made that large, senescent, oocyte-like germ cells are not necessarily female cells — « the crucial point for which the writer is contending.

8. Bidder's organ in *Bufo* corresponds to the larval gonad of frogs which in these forms disappears in the male and is replaced by the definitive testis. In the case of female anurans so far as the writer is aware no one has carried out a thorough investigation of the germ cycle from larval to fully adult life to see whether or not such a degeneration occurs in the female line. In mammals and birds such degeneration of the female embryonic line of germ-cells is quite well established as the work of Winiwarter, Firket and others shows.

The writer is of the opinion that it is only by adopting the view advanced 1 here regarding the homologous nature of the larval male gonad of frogs, and Bidder's organ in *Bufo*, that the problem of sex differentiation in anurans can be placed upon a rational basis. The theory accords with the embryo-logical facts, covers the experimental finding of Witschi and others, accords with our

own cytological data in the bullfrog, accords with the embryonic sexual conditions of other vertebrates, i.e., the degeneration of the embryonic line of germ cells in birds and mammals, and lastly furnishes an explanation of Bidder's organ in Bufo.

The key to the puzzle of sex development in frogs is simply this: every cell that superficially resembles an oocyte is not necessarily a female cell especially when occurring in an otherwise male individual, and that the larval male gonad of anurans is an organ of Bidder — a rudimentary embryonic sex gland with the same sex as the definitive gonad arising out of it. Misinterpretation of oviform hypertrophy and degeneration of racially senescent sex cells has rendered chaotic the problem of sex differentiation in anurans 1 (see Plates 1 and 2).

Witschi regards the development of certain somatic sex characters such as the Mullerian ducts as very positive evidence for his theory of sex transformation. He says:

In males which, show a typical development of the testicles, no Mullerian ducts of any significance are formed. On the other hand, such animals as first develop ovaries and later undergo the transformation of sex, also show regular oviducts; and these continue to grow just up to the time when the transformation of sex begins. This parallelism in the behavior of the Mullerian ducts and the gonads furnishes definite proof that the " eggs " and " ovocytes," described by the writer, are in fact really eggs and ovocytes and that the transformation of sex is a well-established fact. After the transformation of sex, when the ovocytes have disappeared, the Mullerian ducts begin to shrink but they do not disappear completely, etc., etc.

The following data shows that in reality such so-called parallelism in the behavior of the Mullerian ducts and the gonads does not exist and that evidence based on such parallelism is worthless.

In the normal males of adult *Rana pipiens* the Mullerian ducts are remarkable for their size and degree of development. They arise as cellular cords in the peritoneum at the time of metamorphosis and only acquire full development long after transformation when they come to resemble to a striking degree the oviducts of females (Fig. 2). In the larva of *R. pipiens* the so-called transformation of females into males (degeneration of the pro-testis and formation of the definitive testis) occurs very early in larval life, before the Mullerian ducts appear, and in this species the ducts undergo practically

their entire development after the definitive testis has formed. In other words, while subjected to the influence of the fully formed testis and its ripening sex products the ducts undergo the most marked development known in the males of any anuran species. Moreover, in *Rana catesbeiana*, where if we accept Witschi's interpretation of femaleness, the so-called transformation of female individuals into males is a prolonged process requiring two years, and where the future male larvae are subjected to the so-called female influence during the entire period, the Miillerian duct does not appear. At metamorphosis when the definitive testes are fully formed and spermatozoa are beginning to appear the cellular cords representing the vestigial Miillerian ducts of the female form but do not develop. If Witschi's interpretation were correct, one would certainly expect to find marked development and hypertrophy of the Miillerian ducts in *R. catesbeiana* because of their being so long exposed to female influence. As a matter of fact, these structures in the male bullfrog are less developed than in other forms.

Fig. 2. Urogenital apparatus of adult *Rana pipiens* showing the normal condition of the Miillerian ducts (md) in males of this species.

The same criticism applies to the so-called developmental correlation of the Miillerian duct with the gonad of the same side in cases of lateral hermaphroditism. What Witschi terms lateral hermaphrodites are nothing more than larvae or young frogs which show the definitive testis developing out of the pro-testis (larval male Bidder's organ) faster on one side than on the other. (See Witschi, *Am. Nat.*, page 533.) In the end such animals develop into definite males with testes symmetrically formed. True lateral hermaphroditism in adult frogs is an exceedingly rare phenomenon. In the writer's material it is rare to find both definitive testes developing out of the pro-testes at the same rate, one gland may be the finished gonad, the other the pro-testis undergoing degeneration. Such larvae are in no sense to be regarded as lateral hermaphrodites. There is no developmental correlation of the Miillerian ducts with the gonad of the same side in *R. catesbeiana* and *R. pipiens*, because there are no ducts formed until after the definitive testes are formed. Regarding the other somatic sex characters such as seminal vesicles and thumb cushions, it should be pointed out that the thumb pad in *R. catesbeiana* is not formed until after metamorphosis when the fully formed testes are present, and the seminal vesicles are absent or rudimentary in the males of many

frog species, and exceedingly well developed in others.

#### Plate I

Fig. 3. So-called oocytes occurring in the degenerating pro-testis of larval bullfrogs. These cells according to the writer's view are merely hypertrophied spermatocytes that have undergone oviform degeneration.

Fig. 4. Section of pro-testis male larva before onset of degeneration. At X is spermatocyte in prophase. The black bodies are ring tetrads.

Fig. 5. The giant spermatocytes of *Scolopendra Heros* (Chilopoda). These cells form functional spermatozoa and make up the greater part of the testes. Note the "germinal vesicle" condition of the nucleus.

#### Plate II

Fig. 6. Spermatocytes of *Scolopendra*.

Figs. 7 and 8. Spermatocytes of *Lithobius* (Chilopoda). The resemblance to oocytes in the germinal vesicle stage is remarkable. Sections of the testes look like ovaries.

All photographs on Plates I and II made at a magnification of 500 diameters. No reduction. Figures 5-8 are from Professor Dlackman's materials

In the few cases reported of true lateral hermaphroditism in adult frogs there is not always a developmental correlation of the Mullerian ducts with the gonad of the same side. Crew ('21), {Journal of Genetics, Vol. II, no. 2} has summarized the known cases of sexual abnormality in amphibians —r see Figs. 7, 8, 9, 12, 14, and 16 of this paper, also the report of cases 21, 22, 23, 24, and 39. These are exceptions to any rule of developmental correlation. In several cases, Figs. 25 and 31, the ducts are quite as well developed in total absence of ovarian tissue as when such is present in large amounts', this, of course, being the normal condition in *Bombina orientalis*. Crew also gives a list of frog cases reported where both gonads were entirely missing and yet the Mullerian ducts were well developed in such individuals.

Because of these facts it is fair to conclude that the appeal to the somatic sex characters completely fails as proof of the transformation of female frogs into males.

In closing, it should be pointed out that Witschi has made but one original investigation of sex in anurans (Witschi '14, no. 1). His later papers on the subject contain no new observations or experiments but are purely speculative endeavors to interpret his early work in accordance with Mendelism ('14, no. 2), later ('20, no. 3)



in accordance with internal secretions.

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## "EATS"

by Elizabeth Robins Pennell.

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It is astonishing how lightly we take the serious things of life. We eat our three meals a day regularly, and any number of non-descript meals between, and it never occurs to us to stop to consider their influence not only upon our daily life but upon the fate of humanity. And yet, what we are is the result of the way we have eaten, just as surely as what we shall be depends on the way we eat now.

The art of cooking humanized the brute. Civilization began in the kitchen. Nothing less than the desire for food in new varieties would have lured arboreal man from his tree. He may have been a primitive saurian, or a primitive ape, when he first climbed up it, but climbing down again made a primitive man of him. If he showed his first glimmer of intelligence by hunting below the tree for variety, he was prompt beyond belief in learning to vary still further what he found. You can take Brillat-Savarin's word for it, though he was not an ethnologist, — only a genius, — that man kindled his first fire to dry and to roast and that, without fire, he would never have got anywhere at all. To possess himself of a permanent oven he built a house to live in, and next, to protect house and oven, he gathered together with his fellow men in villages. The necessity eating was to him, he fancied it must be to the spirits and ghosts who protected or persecuted him and, to propitiate them, he offered them choice samples from his larder and his cellar, the offering inspiring him to ceremonial, to poetry and song, to all the arts. As his methods and taste improved, he discovered a fresh inconvenience in chance catering and marketing and, close to his village, he sowed corn or its equivalent; he planted vineyards and orchards; he raised poultry; he domesticated sheep and cattle and swine. His search now was not so much for new varieties of food as for new methods of preparing it, new sensations in devouring it. From a flinger of raw meat on the embers, or the burier of it in a hole with hot stones, he developed into an artist, a master of technique. The chance he had given up in his cooking and catering, disappeared from his serving. Dinner became a ceremonial. No public or private

joy or sorrow was without its feast and the feasting, abroad and at home, was a new inspiration to art and literature. Dionysus and Demeter disputed with Apollo and Aphrodite for the sculptor's favor and the poet's. The philosophy of Socrates soared to its loftiest heights when he dined with his friends. The shepherds of Theocritus sang their sweetest when their great goddess stood by the wine-press, smiling, with sheaves and poppies in her hand. The odes of Horace would lose their charm had Rome gone dry and Federal Agents emptied his Falernian in the gutter.

When the blight of asceticism fell upon Europe, and dried dates were exalted above the art of the cook, man was plunged into a darkness out of which he might never have emerged if little cloistered communities had not served God by saving what they could from the general wreck. With the dawning of the new light the art of cookery was reborn gloriously and, one after the other, all the arts came into their own again. We turn up our superior noses at the recipes of Cselius Apicius, of such nastiness that learned commentators dismiss them as "garbage," but, nevertheless, he did for the art of cookery what Cimabue and Giotto did for the art of painting. He was the link between the old that had all but perished and the new that was to be, though the new did not come to perfection until, in the seventeenth century, Varenne published his *Cuisinier Frangais*, a less delectable prize for the collector than his *Patissier Frangcde*, but "the starting point of modern cookery." It taught the virtue of order, of simplicity and harmony, in the composition and serving of every dish. Though there were lapses, as there must always be if an art is to evade the failure of perfection, the tendency after Varenne was to improve quality and decrease quantity, not to see how much could be devoured at a sitting and what good time could be made, or how the diner could stuff himself into immobility, but rather how much pleasure could be got from the savor of a sauce or the perfection of a roast; how an art could be made of dining as well as of cooking.

So far America shares the history of cooking with the rest of the world. We did not shake the traditions of Europe from off our feet when we sailed away in the *Mayflower*, and no Promised Land was ever readier than our New World to overflow with corn and oil and wine, nor had prohibition in those old happy days as yet laid its ban upon one item of our Biblical plenty. But at once we set about squandering our blessings wholesale and, not content with this, we are now getting rid of the quality of what remains with the same cheerful indifference. We prostitute our meat, our poultry, our game, our fish, our eggs, our vegetables, our anything and everything that is fresh and fair and flawless, to the monster of cold storage. We have looked upon the fruits of our land, tasted them, known them to be good, and then stored them away until their flavor is frozen out of them, and the cook must exer-

cise his ingenuity to disguise their tastelessness. If the earlier cooks we scorn were lavish with asafoetida, reckless in joining savories to sweets, sugar to spice, it was to disguise not the too little but the too much flavor in meat or game, fish or fowl. Our refrigerator, which saves us from this danger, used in moderation, could have led us to heights unsealed by Varenne. But commerce swooped down upon it, seeing an opening for still another middleman, a chance for keeping back cheap meat until a season of soaring prices, for putting away plentiful crops until a year of lean harvests; and everybody is happy, even the people who now eat without either profit or pleasure. Nourishment has gone; what is worse, taste has gone; and eating has become a mere mechanical stowing away of fuel to keep the machine working. We eat, we know not what. Beef, mutton, pork, veal are as one; vegetables vary only in name. So accustomed have we become to the universal tastelessness that we disdain the fruit that grows at our door to clutch at the fruit from far States : fruit as delicate as strawberries and peaches, whose savor and delicacy are chilled out of them on the journey. We pay big prices in fashionable restaurants, more moderate prices at popular lunch counters, but wherever we go, whatever we pay, it is always cold storage we eat.

Escape is possible for people who live at home, and a few take advantage of the possibility. The outlook would indeed be hopeless were there no exceptions. The American dinner in its perfection is not to be excelled. But too often the perfection is not allowed to speak for itself, and a dinner, like a painting; is not perfect until the endeavor to make it so disappears. The American overemphasizes everything, from the sitting down at table to the getting up. The old groaning board, under which diners paid their tribute, has ceased to be correct; but under his lavish display of china and glass and silver and flowers and lights his new board groans as obviously. He observes order in the succession of the courses, as fashion decrees; but that harmony and simplicity in each may not be mistaken for parsimony or poverty, he provides a second plate upon which an accumulation of bread, rolls, toast, butter, nuts, celery, proves what he could do if convention allowed. When it comes to the roast, he can restrain himself no longer but deposits a "generous portion" on the same plate with an unbelievable collection of sauces, gravies, stuffings, jellies, vegetables. He will even in season set asparagus swimming in the appalling mess — asparagus that is dishonored by the addition of anything more substantial than Hollandaise. For salad, he pours vinegar and oil over a medley of fruits that are ruined in the process; or if lettuce or romaine be preferred, he puts everything he ought not into the dressing, dumps cheese and marmalade into the unholy mixture, and then eats with it hot savory biscuits as further witnesses to the inexhaustible resources of his larder. As if this were not enough, the ice cream is drowned in sauce, each irreproachable in itself, both coarsened in combination, and further

overpowered by cake as rich as money can buy. Everything is overdone, until the beauty of what should be a beautiful dinner is destroyed by the excess of superfluous and flamboyant ornament. In less pleasant places the display is made in less pleasant ways. Plenty that shrieks at you is the restaurant's lure — who does not know those amazing windows filled up with enough cakes oozing cream to make you hope you may never see a cake again, or enough fruit to kill an army; or a heterogeneous assortment of delicacies to stagger the stoutest appetite? Some restaurants still barricade your dinner plate with a disconcerting array of little bird's bathtubs full of vegetables; others have exchanged them for that more modern horror, the Platter Dinner. The crowded Main and Side Dishes of earlier menus were bad enough in all conscience; but at least their deplorable variety was distributed: only by the diner's choice was it all deposited upon his plate. The Platter Dinner leaves him no choice. On one vast surface the jumble is made ready for him, an offense to the eye and, more serious, to the palate. To eat so many things together is to taste nothing. Most serious of all, the jumble must be eaten at top speed or else it grows stone cold, reduced to a loathsome swamp of grease before the platter can be cleared.

Hurry to us as a nation is, of course, no grievance, for our pride is in what we think our hustling. The American business man would neglect a duty if he did not bolt a Quick Lunch, and, having accepted this Quick Lunch as our ideal, everything is arranged to quicken our already quick pace. Some cafes dispense with tables and set plates and cups and tumblers on the widened arm of a chair, an irresistible invitation to those who sit down to get promptly up again. Others retain the tables but crowd them too close to induce people, who do not enjoy being jostled like pigs at a trough, to stay longer than they can help. The Automat does better still, since, after you put your money in the slot, the sandwich or salad, the coffee or chocolate, that comes out may be

- swallowed as you stand — not one fraction of a second lost in a hunt for a seat. But it is the Cafeteria that does best. There, when at last you begin, your lunch or dinner, you must be double quick in order to catch up the time you spent waiting in a long line as if you were at a railway ticket office; calculating how many knives, forks and spoons will see you through, not forgetting the paper napkin; pouncing upon odd morsels from huge tubs of food; balancing a heavy tray as your accumulations increase, as you recklessly dive into your pocket for money at the desk, as you scuffle for a table or a chair. And if you venture to slacken your pace while you gobble down soup, meat, salad, with the ice cream melting before your eyes, more weary tray-balancers at your back, scowling reproach, would cure you of your slowness. And yet, in one I tried for economy's sake — and paid for by my extravagance in the reaction — I have seen parsons, professors, army and navy officers, civil servants, museum directors, at the dinner hour,

feeding, not dining, by this degrading method. I have seen children emerge triumphantly from the line with two portions of ice cream and two of pie, exulting in their emancipation from the solids. I have heard of another where fashion gathers for lunch. Now, what can children brought up in this way, what can people willing to put up with the degradation, know of the art of dining or even of ordinary decency at table? As a result of our indifference, our own manners are going and our aliens are shedding the little courtesies they practised in their native lands. Our health is going. We have become as a nation puffy-faced, sallow, fat, through our eating the wrong thing, in the wrong way, at the wrong hour. The man who first wrote "Eats" above his restaurant door, spoke the truth better than he knew, in one word pointing out to us the depths to which we have sunk.

The idea of dinner as something to be rushed through and escaped from, has become national. In the most perfectly equipped restaurant you must hold on tight to your plate or the waiter will be off with it before you have eaten a mouthful. In the most perfectly appointed private house you might fancy a reward promised to the swiftest maid or butler. Dinner, rightly understood, is a ceremony, the great event of the day, a work of art to linger over, to delight in. Man has evolved no higher form of pleasure, none that is such an eloquent incentive to the art of conversation. When people do not devour their food as if a taxi was ticking away a fortune at their door, but talk as they dine, they talk their best. Could Socrates, in a cafeteria or over a platter, have spoken those words of wisdom that the modern uplifter, who never dines, so sadly misinterprets? Or could either platter or cafeteria have opened the willing mouth of our own Autocrat, even at the Breakfast Table? For dinner, wits once prepared their most brilliant flashes, gossips reserved their most joyous scandals, statesmen unbent to their most discreet indiscretions. In England, the Prime Minister still makes the Lord Mayor's banquet in November, the Royal Academy dinner in May, occasions for his most important statements to the public. In England the youth of the country still ask : "Is there anything better in the world than sitting at a table and eating good food and drinking great drink and discussing everything under the sun with wise and brilliant people?" We do not take time to know that food is good and drink is great — to talk ourselves or to listen to others talk. We waste our golden chance with the same unconcern with which we have squandered the richness of our fields, our woods, and our waters. Talk, however brilliant, bores us to extinction. In restaurants we dance between the courses to make the dinner hour seem shorter; we cannot swallow our afternoon tea without two-stepping or toddling. At the public banquet, we must have movies to stare at or jazz — not music — to deafen us; anything to save us from talk. In private houses we gallop through the chefs masterpieces to get the sooner to the concert,

the opera, the bridge table — always, everywhere, some reason for hurry, some excuse not to say anything ourselves or to let anybody else say it for us. We tear at express speed through our "Eats" and exalt ourselves as a model for all the world.

A few years ago the hope was that wine would show us the evil of our ways and reform them. For long we understood the art of drinking still less than the art of eating. No doubt the reason was the difficulty and expense of providing ourselves with wine before we had vineyards of our own. Certainly, we had no objection to wine. Philadelphia cellars, and perhaps cellars in other towns, are not yet emptied of the Madeira with which our forefathers filled them. Nor had we any objection to stronger waters. But when I was young the house was the exception where the Madeira was brought up every day from the cellar, while the stronger waters were gulped down at the club or the saloon by the men of the family on their way home to virtuous ice water. To drink at dinner was not usual, and this was why men drank harder in their clubs. In the saloon a man was not allowed, as in the civilized cafe, to stay as long as he chose for one little glass; he had to go unless he paid for a second. Custom made of Americans gluttons, not artists, in their drinking.

Wine is as essential as bread to a good dinner. The wise man would no more drink too much wine than eat too much bread, no more take odd drinks throughout the day than stuff himself between meals. But without wine dinner is not dinner for those who know what dining is. It is hard to say what it degenerates into when the substitute is coffee with milk, or milk by itself. Without wine, the public banquet becomes a funeral feast. How colorless the dreary lines of White Rock, and how the ice in the glasses chills all thought of cheer! Is there a man — or woman — with any sense of things who would not find it as hard as Mr. Balfour to drink a health in water or lemon pop? Who will say that the old-fashioned bar was less good for us than the ice-cream-soda and French-pastry counter which fashionable hotels now advertise? It took centuries to perfect the wines of Europe, to study the special quality of each so as to know which should go with this course or that — centuries to produce even a vin ordinaire which the fastidious would not feel himself disgraced by drinking. We always could have the wines of Europe, that is, when we could pay for them; Europe's knowledge we inherited without charge; and gradually our own vineyards were supplying us with as good and sound wines at reasonable prices as the Frenchman or the Italian reserves for everyday use. Moreover, drunkenness was no longer considered good form. Fashion had begun to expect "gentlemen", whatever their nationality, to finish their dinner at, not under, the table. Everything promised for the best in the best of all lands. And then came — Prohibition.

Prohibition and Cold Storage between them have dulled and dimmed the color of life for the American. If the art of cookery and the art of dining made us what we are, what are we going to be when success crowns our present efforts to rid ourselves of both? Henry Adams may have been right, we may already have gone over the top of civilization, may now be starting on the downward slope. But where is the hand outstretched to warn us, to bid us halt in our mad career, in our hustling back, step by step, to climb again our primitive tree, to gorge again on the raw nuts of our primitive "Eats"?

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## **MARINE BIODIVERSITY**

by Daniel Brumbaugh

Rotunda Vol. 27, No. 1, January/February 2002

Though we may only see evidence of it occasionally, if at all, our coastal environments and even the oceans at large are in trouble. Oil spills and trash washed up on beaches may be the most obvious signs of human impact on marine systems, but other anthropogenic (i.e., human-caused) threats to biodiversity in the oceans are much more widespread. Most alarming, the web of connections among diverse species—and the ecosystem functions that these species provide—actually appear to be stretched beyond their limits in many places. These stressed systems now exist, according to much historical and archeological evidence, in highly reduced versions, providing less productivity for humans and other species and less resilience to major disturbances like epidemic diseases, hurricanes, and climate changes. Despite the seeming differences in the terrestrial and marine realms, the threats to marine biodiversity can be classified and summarized in the same way as those to terrestrial organisms. The marine environment is threatened by habitat loss, exploitation, pollution, invasive species and climate change. Natural ecosystems are under widespread, systematic threats from people. For example, in coastal systems, the exploitation of fishes and invertebrates may have major effects on habitats, changing one habitat to another type through shifts in important ecological processes. Caribbean coral reefs, with overfished populations of herbivorous fishes, have largely become overgrown with macroalgae since the disappearance (through an introduced disease) of the last major sea urchin herbivore in 1983. As this example shows, effects on habitats may be further exacerbated by introduced, invasive species, as well as various types of pollution that fertilize macroalgae. Climate changes further mediate the interactions of introduced and native species, as well as certain key symbioses like the one between tropical reef-building corals and their internal microalgae. The excessive warming of surface waters, like that predicted under most scenarios of climate change, frequently causes these symbiotic corals to lose their algae—a process known as “coral bleaching”—and die.

The intense interactivity among factors requires a system-level understanding of an ecosystem and the threats to it. Such an approach can account for the dynamic

relationships among diverse human-driven processes. Since environmental problems are derived from complex intersections of social and natural systems, conservation solutions need to be sought there as well.

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*Regretfully, we report the death, on January 20, of the lone survivor of the Academy's 1905-1906 expedition to the Galapagos Islands, Mr. Joseph S. Hunter. Mr. Hunter would have been 93 on his next birthday having been born on August 9, 1879. As recently as 1965, he journeyed to Chula Vista to visit with another member of the expedition, Dr. Francis X. Williams, who passed away in 1967. To Mr. Hunter's family and friends, an expression of appreciation of his many accomplishments and full, long life, and genuine sorrow at his demise.*

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## **JESUS AND OUR GENERATION**

by CHARLES WHITNEY GILKEY, A.M., D.D.  
Minister of the Hyde Park Baptist Church Chicago  
from book of same name, 1925

My first word is to those of you who are students. Just before I left America I attended two student conferences made up of hundreds of delegates from scores of colleges and universities, representing many thousands of students in our central and western states. At both of these gatherings I was instructed by the students themselves to convey their fraternal and most cordial greetings to the students of India whom I might meet upon this journey. In Cairo, where I spoke to two audiences largely made up of Egyptian students, and again in Jerusalem, the same significant thing happened. I have great pleasure, therefore, in delivering to you who are Indian students the greetings of your fellow-students in America, in Palestine, and in Egypt.

My next word is to those among you who may remember any of the previous series of Barrows Lectures. The Barrows Lectureship is to me personally much more than an honorable appointment: it is a sacred trust. Charles Cuthbert Hall, best beloved of all Barrows lecturers, the only one to receive a reappointment for a second visit to the Orient, was my honored teacher and my dear friend. When he came to India the second time,



in 1906-7, I was a student in the institution of which he was then president. The last talk I ever had with him, after his return to America, has deeply influenced the course of my whole life; the night after he died I watched by his body; and more than once during the seventeen years since I have stood by the cross that marks his grave, with its well-earned inscription from the Book of Acts, "Passing through he preached the gospel/"

When, three years later, I took up my present work near the University of Chicago, I found Charles Richmond Henderson the beloved Chaplain of the University, one of its foremost scholars and its greatest saint. When, in 1912-13, he came to the Orient as the last Barrows lecturer, we who were his neighbors and friends followed his journey round the world with eager interest. All too soon thereafter, worn out by labors too abundant, he passed to his rich reward\* It fell to me as his pastor to share in his funeral service. I shall never forget the tribute one of the most eminent of his colleagues on the faculty whispered to me just after the final benediction at his grave: "There lies the one man who has ever made religion real to me."

Those of you who knew or heard Dr. Hall and Dr. Henderson will understand, therefore, with what personal feelings of humble and reverent affection I take up a task which these two scholarly and saintly men were the last to lay down. You will see at once that I do not come to India with the ripe wisdom and international renown of my four predecessors in this lectureship Barrows, Fairbairn, Hall, and Henderson. It is plainly evident that the present lecturer is a spokesman for the younger generation: that was, I must believe, the intention of the Barrows trustees in making the appointment. But as my own work has lain for nearly fifteen years in the very shadow of one great American university, and during the last ten years has taken me into not less than forty other colleges and universities in all parts of America, from the Atlantic to the Pacific and from Canada to the Gulf of Mexico, I can at least tell you, as Indian students, something of what is in the minds and hearts of your American fellow-students as they face the great social and spiritual problems of our generation.

I am struck to find, on this journey nearly half-way round the world, how many of the same thoughts and feelings are stirring in the younger generation, and especially among the students, of every land I have visited. As our steamer from Egypt to India headed east under one flaming sunset I was talking at length with an Indian student who had just taken a degree in business administration after more than three years' study in New York City. "Of course/" he said, "business is my chosen profession; but what I care most about as I come back to my own country is using my profession as a means by which I can serve India," How quickly I recognized that note, so characteristic of the younger generation, as I have myself heard it in personal talks with scores of students. Not only American students, but also, and even more markedly, the Chinese students in America, are striking it constantly. Back of it is the intuitive sense that a new China, a new America, a new India, a new world, is in the making in these critical years and the eager desire to take a worthy part in their making.

I was reminded again, under that Indian sunset, of a beautiful story about William I L Baldwin, Jr., the young president of the Long Island Railroad in the days when the tunnels under the Hudson and East Rivers into New York City were being built. A neighbor of his remarked as they were crossing the ferry one morning on their way to work, "Won't it be fine to live in New York when the tunnels are finished, and we can ride right into the city by train?" "Yes/\* said Mr. Baldwin, "I suppose it will. But I, for my part, would far rather live in New York now, while the tunnels are being built, and have my part in the making of them." That was the authentic voice of youth in every generation, and in none more characteristic than in our own. They in whose hearts that voice finds eager echo are young in spirit, whether their calendar years be few or many. To all such in the East, on behalf of their spiritual contemporaries in the West, these lectures are addressed.

The building of these new nations and this new world will be a task far more prolonged and difficult than the construction of any tunnels. There are ignorances and prejudices, rivalries and conflicts of

interest, misunderstandings and suspicions and bitteresses, separating group from group and nation from nation, that are at least as hard to penetrate as any wall of rock. And human nature itself seems sometimes as unstable and shifting a medium in which to work as any bed of sand. Moreover, we know far more about the technique of tunnels than we do as yet about the art of building a better world; so fast and far has mechanical engineering outrun social and spiritual construction, and so much easier is it. But it is at least encouraging that there are so many men of good will in many lands, stretching out hands and minds and hearts to each other across the gaps and gulfs that divide our world, and seeking to learn together the fine art of human co-operation. The number of such seems on the whole to increase with each generation, especially among its youth; and it was never larger than among the students of the world at the present time.

It is such mutual understanding and interchange between East and West in matters religious that the Barrows Lectures were founded to promote. The "friendly, temperate, and conciliatory way" .... and "fraternal spirit" so finely described by Mrs. Haskell in a memorable sentence of her letter of gift more than thirty years ago were rarer then in religious affairs than, happily, they are today. My four distinguished predecessors in this lectureship, coming from West to East, have done much to promote them. But during these thirty years the tide of spiritual influence and interchange has by no means flowed only one way\* It was the deep impression made by Swami Vivekananda as the leading representative of Hinduism at the World's Parliament of Religions in Chicago In 1893 that immediately preceded the foundation of these lectures. The concrete suggestion came to Mrs. Haskell, as she has herself told us, from Mr. P. C. Mozoomdar, of India. While the Barrows lecturers have been visiting the East, Rabindranath Tagore has been lecturing and reading in the West, and his writings have gone far, wide, and deep. I well remember across the years the evening when I heard him read from his own works to a great audience in Chicago. I had to wait my turn to secure his latest novel from the University Club library there last spring. And I never shall forget the remark of one of our own

greatest religious leaders as he presented me, ten years ago, with the copy of Gitanjali which I have since learned to love "I wonder If this is not the great God-consciousness of our generation." He could not then have foreseen that India would so quickly give yet another great God-consciousness to the world. America knows very little about Indian political issues, and is therefore hardly in a position to pass intelligent judgment upon them. But there is the keenest interest and interest clearly reflected in our best magazines, such as the Atlantic Monthly', and equally at every great university center in Mahatma Gandhi as a moral and spiritual leader. Our younger generation, especially, is more and more coming to regard him as one of the very greatest religious personalities of our time.

How the farsighted founder of these lectures would have rejoiced in all these indications of a better mutual understanding between East and West in the things of the spirit^ and how eagerly she would have hoped that in the years to come we may draw closer yet!

In this first lecture I would direct your thought more especially to the two great spiritual needs which the last ten years the years during and since the Great War have disclosed to thoughtful men everywhere as the supreme spiritual needs of all mankind alike. The first of these is the need for spiritual guidance. Just what I mean by that I can perhaps best tell you in a figure.

Every schoolboy knows that Niagara Falls is one of the great natural wonders of America; and most of you have doubtless wished that you might sometime see for yourselves that tremendous spectacle. The overflow of four great lakes, each as large as an inland sea, hurls itself there incessantly over a curving wall of rock hundreds of yards wide and nearly two hundred feet high with a roar like unceasing thunder, and a spray that blows in drifting white clouds high above the crest. The water rushes over, broken gray; in mid-stream it is deep enough to appear clear green. In winter the river brings down huge cakes of ice that lift and fling themselves over the edge into the abyss below; but the sound of their crash cannot be heard above the roar of the torrent.

Just below the Falls the river settles down quickly enough on its new level, smooth and dark. A little steamer, the "Maid of the Mist/" carries visitors up into the spray for a close view of the Falls from below. But this apparent quiet is not for long. Within a scant mile the stream enters the narrow gorge of the Niagara Rapids, and for miles thereafter it is tossed and torn again into wild white fury. Great cakes of ice are flung about in winter like sticks of wood, and no boat could ever live through that long riot of angry water. Even when, far down the gorge, the river runs out smooth and green and deep again, there come eddying up from its hidden depths great whirlpools of water that twist themselves about for a hundred yards, and then disappear as suddenly and mysteriously as they came. The observer from the shore is puzzled for the moment as to the direction of the main stream because of the back-current of these eddies.

Our own generation has passed through a social and spiritual experience that is not unlike all this. The world of 1914 was flung almost without warning over the sudden precipice of the Great War. When,, after four long years of uproar and agony, November n, 1918, came at last,, we all expected that life would soon settle down quietly again on the new post-war level. Our own President Harding coined the phrase "back to normalcy" for that delusive hope. We know now that after so tragic and prolonged a disturbance no such quick quiet was humanly possible. Like the Niagara River, our generation has run rapidly on into years of confusion and turbulence that have made this post-war period a dangerous and difficult time the world around. And even when things have seemed to begin to settle down once more, there have surged up from the depths of the human heart and of the public mind sudden whirlpools of emotion and impulse that have not only perplexed us as to the direction of the main current, but have caught us helpless in their strong back-eddy: suspicions and fears and hates between nations and races, new ambitions and aspirations within classes and colors and countries, new forces loose in a swiftly changing world that neither prophets nor statesmen can calculate, much less control\* The youngest of us will spend our whole lives in a

world still trying to steer its difficult way amid the rapids and the whirlpools that stretch far below the Niagara Falls of the Great War.

It is not simply the social experience of our generation, however, that has been thus convulsed and confused. Its intellectual life has passed through a period and a process hardly less revolutionary. President Burton of the University of Chicago has remarked to his students and friends that probably no generation in human history has ever had to readjust its thinking to so many new facts from so many different quarters in so short a space of time, as have the men and women who have been alive during the last half-century, and have tried to keep in touch with what mankind is finding out. Not simply the natural sciences that have so vastly extended and so radically altered our conceptions of the physical universe about us and of the history of life upon this planet, but hardly less the social sciences, with their new knowledge of human origins, history, literature, and interactions, have carried the intellectual life of mankind to a new level within our own lifetime. On that new level the best thinking of our own generation must be done; for whether we like it or not, we cannot go back above the falls to the tight little earth-centered universe, the brief and brightly lighted historical background, the uncritical conceptions and assumptions of an earlier day. The new physics, the new historical method, the new sociology, the new comparative religion, and now, not least, the new psychology, have poured upon us a mingled flood of facts, probabilities, and possibilities that has swept us inexorably into one of the most rapid and confused periods of intellectual transition in all human experience. Just where, when, or how we shall come out no thoughtful man can foresee.

Now there is no group or class among us on whom these influences and perplexities fall with such sudden and tremendous force as upon serious-minded students of college age and grade. They have but just come over that precipice in both thinking and experience that always lies somewhere between childhood and real maturity. The things that many of them were taught and took for granted as children, back there above the falls, no longer pass unquestioned in this new world of

the critical and exploring mind in which they must henceforth live. Only less than their elders, who took some personal part in the Great War, have they felt the force of the powerful current of disillusionment which, after these years of high hopes and bitter disappointments since 1918, has carried so many of the most sensitive-souled folk of this generation into some backwater of cynicism. And in the midst of all this mental and spiritual confusion there come surging up within their own hearts, like the sudden eddies in the Niagara River below the falls, new impulses, new emotions, new aspirations: the strong passions that provide so many problems for our human nature, and yet, close alongside these, the high idealism and altruism and spirituality that are equally part of our human endowment. Every young man, especially, knows in his own heart something of this bewildering rush of rapid and whirlpool; the Sturm und Drang through which youth must always pass, complicated and reinforced by all the cross-currents that confuse and agitate our own generation. Is it any wonder that he is uncertain sometimes about his own inner life which is the eddy, and which the main stream? Or is it strange that so many observers of "this younger generation," standing on the bank as it rushes past, should sometimes in their natural anxiety see chiefly the eddies, and miss the deeper current that includes and bears them on ?

Every boatman knows that in quick water it is dangerous, if not fatal, to drift; the swift current bear him onward fast enough, but it may equally fling him on a rock or upset him in a rapid. Only a quick eye for the deep water, a firm hand to push into it, and a stout heart that does not lose its courage and confidence, will bring him safely through. This has been pointed out a thousand times to individual young men in the quick water of youth. They will not win through to real manhood simply by drifting with the current: that may mean shipwreck, as everyone knows. But not everyone sees that all this is no less true of a generation, like our own, that is passing through some of the quickest water in all human experience. The one thing we must not do in difficult and critical days like these is to drift.

In a recent sermon at the Royal Exchange in

London that picturesque and original figure among British preachers, Rev. G. A. Studdert-Kennedy, put this familiar truth with great vividness into the terms of our own time;

*Anything is better than wobbling\* People say that we can drift into peace. You will neither drift into peace nor into victory; you will drift into hell*

If we are going to make peace, then we must pursue peace with the same tremendous earnestness, with the same steadfastness of purpose^ with the same unconquerable hope and faith that we pursued victory in the war. We cannot drift into peace; it is going to be the most tremendous and supreme effort of the human race; and if you just let things slide, act neither upon one faith nor upon the other, pursue a policy of pinpricks because you do not know how to wield a sword, and you dare not walk without one if you wobble and waver through the world, you will come to disaster. Either you must make justice and reason the basis of your entire constitution all over the world, seeking justice for the black man as for the white man, and appealing to reason and appealing to what is right; or, for God's sake, buckle on your sword, and use it as your fathers did, without wavering.

There are two reasons why a generation like our own cannot drift in days like these without risk of disaster. One is that the river we are descending is full, not only of rocks and rapids that everybody can see, but of ice-cakes that have come over the falls from a bygone winter, and are hardly less dangerous to successful navigation. Barely ten years ago the Allied world went to war to "smash Prussian militarism" as the great enemy of democracy. But one cannot stay long, these post-war days, in any Allied country without coming upon huge cakes of the militaristic state of mind, that has "learned nothing and forgotten nothing" since 1914, and that imperils civilization itself no less than it imperils democracy. We westerners used to think that religious intolerance and bitterness had passed from among us with the Middle Ages ; but our post-war world is suddenly full of it again. The non-Teutonic world bitterly resented the swaggering conceit of Germanic Kultur and its arrogant claim to world-domination ten years ago, and smiled at the supposedly scientific arguments for its racial and cultural superiority that were learnedly marshaled by its exponents. Today the Anglo-Saxon world is full



of earnest and excited folk talking in very much the same fashion about "Nordic superiority." The language has changed since the war, but the state of mind is still with us, and dangerous as ever to the peace and progress of humanity.

But the deeper danger is the uncertainty of our own minds and hearts about our ultimate goals and ideals. Our generation is drifting, chiefly because it is inwardly divided as to which course it really wants to steer. As Mr. Studdert-Kennedy points out, two channels are plainly opening out ahead of us. One looks, at first sight, wider and easier, and the strong men and strong nations have almost always followed it. "Every man for himself, and the devil take the hinder most" 1

*He may take who has the power,  
And he may keep who can\**

Nor are there lacking loud voices in our own time to insist that this is the only course for "two-fisted he-men/" and nations that would be great, to steer. One of our Chicago dailies that, with a self-assurance rather unusual even in America, calls itself at the top of its first page "the world's greatest newspaper/" prints every day at the head of its editorial page the slogan of its noisy patriotism, "My country, right or wrong." And an eminent British public man, in an academic address that has echoed round the world, has recently declared that still, as of old, there are glittering prizes to be won by those nations that keep their swords sharp and ready.

Voices like these find quick and resonant echo from some of the elemental instincts of our own very human hearts and some of the old traditions of our national life. But somehow, in spite of these incitements without and within, we hesitate. More and more clearly, amid all the shouting, we hear from the bank a warning voice that this wide and easy and much-traveled way is one of several such that lead to destruction. Those who have looked far enough downstream to study the fate of our predecessors report more and more decisively that this prophetic warning has been sadly borne out by human history and experience. 'They that take the sword shall perish with the sword.'\* Besides, whether from too much conscience or too

little nerve, we cannot quite bring ourselves any longer to be entirely ruthless, either with our swords or our fists, or altogether heartless about the fate of the hindermost. We have been hearing too long that voice from the bank, and it, no less than the other, has found too many echoes in our own deepest hearts.

And so, in our inner hesitancy, we drift. The warning voice comes again, that this too is dangerous: "Ye cannot serve God and Mammon/' It bids us look for another channel: "Seek ye first the Kingdom of God, and his righteousness; and all these things shall be added unto you/' But it warns us that this other course will not be easy to find, and very hard to follow: "Straight is the gate, and narrow is the way, that leadeth unto life; and few there be that find it/' The more we look this other way, the greater the difficulties and risks appear, until our hearts fail us for our little faith\* With these two channels before us the one broad, alluring, but dangerous; the other narrow, risky, and difficult- -we drift on still, uncertain which way to steer. Our urgent need is for decisive spiritual guidance. The hymn that some of us learned to sing as children by the seashore begins to take on a new and deeper contemporary meaning:

*Jesus, Saviour, pilot me  
Over life's tempestuous sea;  
Unknown waves before me roll,  
Hiding rock and treacherous shoal;  
Chart and compass came from Thee:  
Jesus, Saviour, pilot me.*

If this be a recognizable picture of our present situation, it becomes at once evident that even deeper and greater than our need for guidance is our need for spiritual power. With such real dangers and such great possibilities before us, what we lack is the decisive conviction to turn our backs on the easier course, and the courageous and creative faith to seek out the narrow way. In a world where men almost always know much more and much better than they do, the ultimate spiritual problem is usually one of dynamic; and this is notably true of our own sophisticated and disillusioned generation. Partly we lack accurate knowledge to guide us; still more we lack creative faith to inspire us\*

Among my neighbors and friends at the University of Chicago are some of the world's most eminent physicists, geologists, and astronomers. From them I have picked up, bit by bit, a layman's cursory acquaintance with what seems to them at present the most probable scientific hypothesis as to the process by which our world was made and our solar system organized. Long aeons ago, as our flaming sun wandered through space God alone knows whence or whither it came within range of loose and scattered masses of spiral nebulae "star-stuff," thin, incoherent, anarchic. As it marched on past, its attractive power gripped these scattered masses, drew them after itself, welded them together, and built them up into planets, and swung them about itself in the orderly and dependable orbit of our present solar system. So orderly is that system that by it we set our watches, reckon our years, and calculate the shadow of a solar eclipse centuries ahead to the minute and the mile. Great Jupiter never interferes with little Mercury, nor need little Mercury fear great Jupiter; each has its own place and plays its own part in the celestial harmony.

It is some such organizing principle and energizing power that is the supreme spiritual need of our personal lives and our common life in difficult days like these. Our own personalities are for the most part disorganized and incoherent as the spiral nebulae: "soul-stuff" drifting aimless at the whim of impulse or the beck of fashion. "The hero," said Emerson, "is the man who is immovably centered." But lacking such spiritual coherence and consolidation, divided against ourselves by conflicting desires, with no central loyalty to dominate them, we neither bulk very large nor move very dependably. Even more obviously is this our great social need. On what principle, around what center, can human life be so organized as to save it from confusion and disorder, and built up into an orderly system in which each group and class and race and nation can add to its own weight and value, while at the same time it keeps its place dependably in the whole co-operative relationship? It is that central organizing principle for which our post-war world is seeking, without which it must drift in continual danger of falling back into "chaos and old night."

It is, at least, reasonably clear since 1914 that some organizing principles on which men have long relied cannot adequately provide this dynamic. Superior force cannot do it\* Force may dominate in a collision, but the result will inevitably be a smash-up, not a system. The constant tendency of superior force, as our modern world has learned to its terrific cost, is to call forth counter-force to resist it. The resulting "balance of power"\* is a most precarious and unstable equilibrium, with a disaster whenever it is upset. Nor can self-interest supply that principle, as R. H. Tawney has so convincingly shown in his study of *An Acquisitive Society*. It can draw weaker bodies helplessly into its train, and flash brilliant for a day like a comet in the sky; but its ultimate spiritual destiny is the outer darkness, for it has learned neither to obey nor to serve. It makes shooting stars, not systems. And competition cannot provide that principle. It can stimulate a short race where someone is strong and impartial enough to maintain fair conditions; but in large matters its usual outcome is well described by your own Indian proverb about the one big fish with all the smaller fishes inside. That is hardly a system. Only half-consciously as yet, perhaps, but none the less urgently, our modern world is groping for a source of spiritual dynamic adequate for the personal and social demands of the future a dynamic which neither force nor self-interest nor competition can sufficiently supply.

Now It is one of the deeply significant facts of our time, to which I ask your attention finally today, that in their search for this spiritual guidance and power, the minds and hearts of thoughtful men in many lands, regardless of race and creed, are turning afresh to Jesus of Nazareth. Because I do not want to ask you to take my own unsupported assertion in this matter, I shall bring you some striking first-hand evidence on this point from leaders of thought the world around, who can hardly be discounted as professional propagandists in any sectarian sense. George Bernard Shaw, that brilliant, heretical Irishman who has not only seen through so many of the shams of modern life, but has been looking of late so deep into some of its ultimate needs, says:

I am no more a Christian than Pilate was, or you, gentle

reader; and yet, like Pilate, I greatly prefer Jesus to Annas or Caiaphas; and I am ready to admit that, after contemplating the world and human nature for nearly sixty years, I see no way out of the world's misery but the way which would have been found by Christ's will, if he had undertaken the work of a modern practical statesman.

And again:

Though we crucified Christ on a stick, he somehow managed to get hold of the right end of it, and . . . if we were better men, we might try his plan .

And you remember Shaw's remark that the only man who came out of the war with an enhanced reputation for common sense was Jesus Christ.

A year ago the editor of the Indian Social Reformer -, Mr. K. Natarajan, of Bombay, wrote a Christmas editorial that has echoed around the world, I have myself clipped it in quotation from two American periodicals. In that editorial he said ;

More than nineteen hundred years ago Jesus Christ was nailed upon the cross by a Roman governor. The orthodox Jews who instigated Pilate to commit this infamous crime were no doubt satisfied that the great movement which Christ had set on foot had failed. Failed! It was Roman justice that had failed- It was Jewish bigotry that had failed. An empire which has ceased to heed the voice of justice and humanity in the pursuit of its selfish interests which are always ephemeral is like a tree, rotten, and awaiting the first passing blast to come to the ground. The Roman empire fell, and upon its ruins the Church of Christ rose to a great height of power. And though today Christianity but feebly reflects the spirit of its Master, the personality of the Master himself stands before the world in compelling grandeur.

Never before have so many earnest minds of all races and creeds turned to him for light and guidance in perplexities. The number and insight of new lives of Christ are alone evidence of the fresh and deepened interest in His life and teaching.

Another prominent Hindu recently remarked to Dr. E. Stanley Jones, who told me of it just before I left Chicago to go to India: "There seems to be no one else seriously bidding for the heart of the world except Jesus Christ, There is no one else on the field/"

A young Chinese, who had just finished his studies in New York City and was going back to become superintendent of schools in one of the great cities of China, said to Dr. Harry E. Fosdick: "I want Christ, and I want Christ because I want power that I may live a serviceable life for my people before I fall on sleep." That single sentence speaks for the desires that are deepest in many hearts of the younger generation in other lands as well. Its emphasis is characteristic and significant: Christ, power, service.

From my own land I quote two utterances only out of scores that would be appropriate. One of the most stimulating of younger American thinkers in matters spiritual, Dean W. L. Sperry of Harvard, to whose essays on The Disciplines of Liberty these lectures owe a great debt, writes thus on the very first page: "We are living in a world which has all but exhausted the moral possibilities of the dogmas of enlightened self-interest, free competition, paternalism, and kindred nostrums; a world which finds itself driven on by this process of moral elimination to the religion of Jesus." And one of the foremost Canadian-American authorities on the life of Jesus, Professor E. F. Scott, begins his recent book on The Ethical Teaching of Jesus thus: "Today, as never before, Jesus stands out as the moral leader of humanity. The principles which he laid down have been vindicated through the bitter experiences of the last few years, and men of all opinions are now agreed that the society of the future can be securely built on no other foundation."

It is easy to find clear echo of these words in the recent utterances of responsible statesmen. During the darkest days of the Great War one of the most eminent of American Jews, Henry Morgenthau, then our ambassador to Turkey, said that he could see no way out for the future except in the principles of Jesus. That same conviction was the deep undertone of the last brief utterance that Woodrow Wilson wrote for publication; and it found even more explicit utterance in the last public address but one of President Harding before his sudden death.

But even more prophetically significant is the

utterance which that same conviction is finding among the younger generation, and notably among students, the world around. I have already quoted one such from a Chinese student. Last November, in Jerusalem, in a large gathering of students most of whom were Moslems, I myself heard a young Indian professor who had been sent to represent the Indian Student Movement at a conference near London of the World's Student Christian Federation, say that in the principles of Jesus, taken very seriously and applied over the whole range of human life, is the only real hope of the future for all mankind- I shall never forget either the setting or the significance of that utterance. While I was in London last September a Cambridge undergraduate, speaking before a church congress, declared that his own generation wanted to be very sure that the Christian church itself, with all its traditions and ceremonies and creeds., did not get in the way of their seeing Jesus. There speaks an authentic voice from the younger generation the world around. It is looking beyond the institutions and creeds and ceremonies that have taken Christ's name looking through them when it can, past them when it must for a fresh clear sight of Jesus himself. There is an open-eyed fearlessness and intellectual courage in this attitude which no one who knows the students of today can miss. They are not afraid of all that science and history and philosophy can tell us about the world in which we live; they welcome the clearer light which recent scholarship is giving us, not only on these other matters, but on the figure of Jesus himself. Competent authorities tell us that no previous generation since his day has been in so favorable a position as our own to see and understand him better: that in itself is one of the many influences that are bringing us nearer to him and him nearer to us. But an even larger factor in making possible this new vision of Christ is the spiritual sincerity and earnestness that is impelling the younger generation to seek It. I understand that when a company of Indian Christians recently called on Mahatma Gandhi to ask for a word of spiritual counsel, he bade them put into practice the teachings of Jesus "in all their rugged simplicity." I am deeply grateful to the great spiritual leader of India for that word of insight and power. Let me put beside it a similar word from one of the great spiritual leaders of the West, who has more

influence over American students today in these matters than any other man. Dr. Harry Emerson Fosdick. He declares that "the high business of taking Jesus seriously" is the most important task of our time.

That is the keynote of these Barrows Lectures: "The high business of taking Jesus seriously/" "in all his rugged simplicity." I shall venture to ask those of you who come here these six days to lay aside so far as possible, as I myself shall try to do, the traditions and the preconceptions and, most of all, the misconceptions that may have come between us and him. Let us look past creed and ceremony and civilization and church, all of which only partly deserve his name, straight to Jesus himself- That we also, gathered here together, may see him afresh is my deepest hope and faith and prayer.

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## **The Humpbacks of Antongil Bay**

by Caitlin Tunney, Editor

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Antongil Bay nestles in the northeast corner of the island nation of Madagascar and, from there, spills into the Indian Ocean. From July through September, these waters are the home to over a thousand humpback whales, who migrate here each year to breed and to calve. For the last five breeding seasons, biologist Howard C. Rosenbaum and a team of researchers and scientists have been here to meet them.

### **THERE IS MUCH ABOUT HUMPBACK WHALES THAT REMAINS A MYSTERY**

The Madagascar project, cosponsored by the Museum's Center for Biodiversity and Conservation (CBC), and the Wildlife Conservation Society (WCS), began in 1996, as an attempt to assess what remained of the humpback population in the Madagascar region.

Historically, there were well over 100,000 humpback whales swimming in the Earth's oceans. Today, as a result of more than a century of commercial whaling and poaching, the worldwide humpback population is approximately 30,000. The humpback received official protection in 1968, and is on the Endangered Species List. The humpback population and their habitat, however, remain fragile.

From their base on the small island of Nosy Mangabe, Rosenbaum's team take to the water each season: observing whale behavior, making visual identifications of individual whales based on distinguishing marks, recording whale songs, and taking



tissue samples-with darts and crossbow-which yield DNA.

The DNA and photographic information, once analyzed, is assimilated into a comprehensive database; this information will facilitate collaboration with researchers from around the world. The data helps scientists to assess population accurately, and to gauge the levels of interaction between different whale populations. These discoveries, collectively, will one day provide scientists with the ability to track the whales through their feeding and breeding seasons, as they travel thousands of miles on their migratory cycles.

The initial results from this series of expeditions confirm Antongil Bay as a major winter breeding ground in the Southern Hemisphere. Over the last five years, Rosenbaum and his coworkers have been able to estimate a population of over 1,000 whales. The 2000 expedition alone may have added as many as 200 new whales to the population tally.

As the numbers of identified whales grow, so does the scope of the project. The Madagascar team is expanding their involvement in the region and beyond. Rosenbaum and his coworkers in the field are advising developing conservation movements in several African countries, and are playing a significant role in Madagascar's attempts to develop strong conservation practices. This year, a law was passed governing ecotourism and whale watching in Madagascar's coastal territories, providing protection for the whales as they migrate to and from their breeding ground. This law resulted from the work of the Madagascar team.

Ecotourism, and community participation in conservation efforts to protect the humpback and their habitat, are two of the keys to insuring the survival of the whales. Rosenbaum trains local naturalists, giving them the skills and information that help them participate in the growth of this conservation development activity. He also conducts workshops that bring | together local officials and conservation workers from around Madagascar, | fostering deeper collaboration.

Despite the efforts of scientists like Howard Rosenbaum and his team, there is much about humpback whales which remains a mystery. For example, no one } knows precisely the routes these whales travel throughout the year, it is difficult to track their movements once they leave the breeding ground. In conjunction with genetic and photographic studies, new technology is making this tracking possible. Rosenbaum's team plan to use satellite tagging, which will allow the scientists to track whale movements when visual contact is not possible, and ultimately | 'etter determine the whales' migration youtes and habitat use.

Here's what we do know about the 'migration of these whales: The whales in the Antongil Bay most likely journey from lantarctica, where they feed in the cool, 'polar water. When breeding season arrives, 'the whales migrate 4000 miles north, seeking the warmth of tropical oceans in jorder to breed, calve and nurse. One goal of Rosenbaum's research is to gauge the extent to which the whales return to the 'same breeding ground each year.

Another mystery of the humpback is |their fabled songs. Long the stuff of legend, these songs constitute a true scientific mystery as well. All the whales that

populate a particular breeding

ground sing the same song or a variation, regardless of where they disperse to spend the remainder of the year. The songs change from year to year, and vary from ocean to ocean, and all the whales all in a particular ocean seem to make the change. What kind of a communication tool are these songs? Are they specific mating messages from male to female? No one yet knows for sure, but evidence is mounting to test these hypotheses.

One scientist, working with Rosenbaum, is attempting to find out more about song from humpback whales in Madagascar. Yvette Razafindrakoto, who is the leading humpback expert in Madagascar and has collaborated with Rosenbaum on the expeditions from 1996 through 2000, is studying the songs of the humpback. Humpback songs are structurally very complex; they consist of repeating sound phrases which join together to make themes. Razafindrakoto is working to understand the relationship of songs between humpbacks of Madagascar and other populations.

What is happening off the coast of Madagascar is an attempt to better characterize the humpback, so we may better understand how to protect them and their critical habitat. The impact, however, will be felt far beyond this region.

Through scientific research, capacity building government regulation, community involvement, and the use of the latest technologies to protect this critical habitat, Rosenbaum and his colleagues hope to ensure that these whales can thrive again in Antongil Bay, and around the world.

The Museum's work on humpback whales is supported by the Regina Bauer Frankenberg Foundation.

For more information on this expedition or other CBC-sponsored work, please visit the CBC website at <https://www.amnh.org/science>

<https://archive.org/details/rotunda2631amer/page/n7/mode/thumb>

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## **THE NEIGHBORHOOD SCALE**

from NEGRO PROBLEMS IN CITIES (1928)

by T. J. Woofter, Jr.

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*Each city has its bad and its good neighborhoods, with middle-class neighborhoods predominating, and with many different stages and conditions of home life to be found between the worst and the best. Averages for the whole city tend to give an impression that all the citizens are of one "average" mold, whereas the variations from this average are interesting and significant.*

## NORTHERN AND SOUTHERN

Negro neighborhoods in the North and in the South are not alike, because they have developed in different ways, and because the cities in which they are located are not alike. Northern migration took Negroes from neighborhoods in which a family had a house with a yard and placed them in densely built-up metropolitan areas that for the most part had been occupied by foreigners. In most of the southern cities, within convenient transportation distance of places of Negro employment, there is vacant space in which Negro neighborhoods can develop ; while in the large northern cities, which are already built up, new groups can get into a neighborhood only by crowding other people out.

The attitude of Negroes who go North is different from that of Negro migrants to southern cities. In the South they move in from near-by country districts, largely to improve their economic condition. Many of them take scanty furnishings. They rent any kind of house and get what work they can. Having been badly housed and without conveniences in the country, they do not expect much more in the city. Those who move to the North, however, usually go with the definite feeling that they will improve their standard of living as well as increase the amount they earn. They ex-

pect more in the way of houses, conveniences, and institutions. This accounts for much of their moving from section to section in northern cities.

The physical facts of life are much the same in a two-room cabin on a farm, a two-room shack in town, or a two-room tenement in a city. The difference is in contacts, in wider experiences, and in the opportunities that lessen hardships. Migration to the North has been impelled in part by the desire for these contacts, experiences and opportunities, especially for the children of the family. The opportunity to enter northern industry came as the culmination of Negro progress during sixty-five years; and many families were willing to pioneer to grasp the opportunity. They sold whatever they had in the South to go North and take any shelter for which they could afford the rent until they could earn enough to satisfy their ambitions. Some were not adaptable to changed conditions; but most of the first migrants were strong, ambitious young people, ready to take chances. In later migrations, Negro families went North, established homes, and learned, after ten years of experience, that they

could live in a variety of districts, in any kind of house they could afford. There is among them as wide a range of culture, of income, of ambition, of shiftlessness and thrift, as in any racial group.

### MIGRANT NEIGHBORHOODS

Even though the Negroes that go to cities in the North expect more than migrants to southern cities, their standards, when they arrive, do not measure up to those of the Negroes who were born in the North or who have lived there for some time. This creates a difference between migrant neighborhoods and well-settled neighborhoods within northern cities. The incoming migrants to southern cities are not so definitely separated, but concentrations of newcomers in depressed districts can be found.

Migrants who have friends and who take some money with them soon settle. Unskilled workers, unfamiliar with housing, work, and conditions in cities, have great difficulties. They drift into rooms of lowest rents, staying until they find work, sometimes a long process, and until they learn the city. The process of urbanization places them first in houses that have held many waves of foreign-speech peoples.

In Philadelphia, typical migrant settlements can be found in the second, third, fourth, eleventh and fourteenth wards. Here they find three types of shelter at the lowest available rentals. They are the old court-bandbox houses, tenements, and scattered lodgings.

Court-bandbox houses in the district along the lower river fronts, which have been occupied by wage-earners for seventy-five or a hundred years, consist of three rooms, one set on top of another and with a stairway through a lower room giving access to the room above. These houses are built in long rows the depth of a deep lot, or behind houses facing the street. Entrance is from a narrow side-yard, paved and with a gutter for surface drainage of wash-water and slops; though most of the houses are now underdrained. Walls and chimneys are cracked, plaster is loose, and floors are worn. Many rooms need artificial light all day. Each room houses a family, or lodgers, with entire lack of privacy.

The Philadelphia Housing Association found eleven nationalities in one block. These families, white or colored, rarely go away from the near neighborhood, except as the men go to work, because of the expense of carfare and lack

of knowledge of the city.

The old tenement-houses in South Street are better only in that they allow more contacts. <A typical house, three and a half stories high, with poorly lighted rooms that had windows only on narrow side-yards, was rented to Negroes in twenty-three apartments, twenty of one room, two of two, and one of three, Long, narrow, dim halls, with dark and dangerous stairways, are in the middle of the house. Seven toilets in the public halls, filthy and odorous, are used in common by twenty-three families. Six apartments have sinks, but seventeen families use in common twelve sinks located in the halls.

Many of the one-room apartments are let “furnished” with an old iron bed, a cheap mattress and two pillows, black and greasy with the dirt of tenants who have slept in their clothing without washing, and who have had neither sheets nor covers. A table and a two-holed stove are filthy, and food is eaten from the papers in which it is wrapped when purchased. Oil lamps for lighting are generally used in the daytime. Temporary tenants do not clean; and floors, walls, ceiling, and windows are thick with dirt.

Rents vary with the amount the tenants can pay and the janitor can extract. Some houses have mixed white and colored occupancy, a few are carefully policed by a janitor who throws families out if there is any rough-house, others are shared by idle girls, waiting for night.

In eleven of these tenement-houses, selected as typical by the Division of Housing of the Health Department, 175 families were living in 354 rooms, an average of two rooms per family. Forty-one families lived in one room, 75 in two, 45 in three, and 7 in four. One hundred and sixteen families shared 48 public toilets.

In New York, Chicago, Buffalo, Louisville, Memphis, and New Orleans, similar conditions were found in tenements, arks, rookeries and rows in old changing areas where multiple dwellings are crowded with migrant families.

Most tenants in these neighborhoods do not stay long, however, before they seek better quarters. Their place is filled by new arrivals. The population of these neighborhoods shifts rapidly but does not increase. Columbus Hill in New York, the Lower South side in Chicago, the South side in Philadelphia (seventh, twenty-sixth, thirtieth, and thirty-sixth wards), Central Memphis, Central Atlanta—all show slight decreases or negligible increases in population, while

the better outlying neighborhoods are increasing in population. In Memphis during the past fifteen years there has been a movement of some 5,000 colored people from the congested central districts into the outlying areas. New migrants crowd the old inhabitants of these neighborhoods into newer and better sections of the town and are in turn pushed out by subsequent arrivals. It is genuinely encouraging to note the population increases in outlying neighborhoods that indicate how ambitious families are climbing out of these congested central neighborhoods.

## LARGE CENTRAL COLONIES

All the cities have these large central sections which have 'certain traits in common. They are large, the largest Negro neighborhood usually being centrally located. The South side, in Chicago, probably the largest Negro community in the world, numbers 126,000 people; Harlem in New York, though not a typical central section, numbers 124,000; the South side in Philadelphia, 51,000; Central Memphis, 22,000; and Central Atlanta, 18,000. These are such great aggregations of population that each has a community life all its own. They contain the large churches, schools, theaters, centers of commercial recreation and business houses. The main arteries, Lenox Avenue in Harlem, State Street in Chicago, South Street in Philadelphia, Beale Street in Memphis, Second Street in Richmond, and Auburn Avenue in Atlanta are business streets of bustle and activity, and are the main thoroughfares for thousands of people. The central position of these sections also subjects them all to invasion by business and manufacturing establishments, and to the subsequent depreciation of property for residence purposes. Large areas are so directly in the line of the business and manufacturing expansion of the cities that property is intrinsically worth high prices for commercial purposes though very much depreciated for residence uses. Under these circumstances, landlords, who are holding for profits from sale for commercial purposes, look upon the rental houses on their land merely as a source of temporary income. They make as few repairs and improvements as possible. Neighborhoods of this kind therefore become dilapidated and insanitary, and are eyesores to the city. On other streets where 'business has actually come in, it is usual to find buildings designed so that the first floor is given over to commercial purposes and from one to seven floors above to tenements. 'Often these residence quarters are entirely secondary to the 'business uses of the building and are poorly arranged, poorly equipped, and insanitary. ;

Because they are central, relatively low in rentals, and not 'desirable for high-class residences, vice often invades these areas. On the other hand, they are favorably situated for municipal improvements, sewers are usually laid, streets and sidewalks are paved, lights are provided, and police protection is much better than in outlying sections.

In these central sections there are often neighborhoods in which the dregs of the population, of all races and colors, settle. The shiftless, vicious, ignorant, ne'er-do-wells move in and out, dodging rent days, spending irregular earnings on sensuous pleasures. Houses are old and worn, owners or agents are neglectful, city officials are indifferent, social workers have no means of making changes, and police activities are largely confined to raids or searches for criminals. The districts are notorious for indolence, vice, crime, disease and poverty. They are out of sight of the average citizen and are visited only by installment and rent collectors, insurance agents, truant officers, an occasional sanitary inspector and social workers.

In Richmond, the worst district lies in a deep valley and on the steep hillsides of Shockoe Creek and along the railroad. Very old brick and frame houses face on unimproved streets that have no sewers or water mains, so that sanitary conditions are bad.

In Lynchburg, Salem Street has had for years an unsavory reputation for drinking and vice. Factories lie along the tops of the hills, and the street which winds down a valley is rarely used except by occupants of the old houses. Furniture is sketchy, the housekeeping is casual, the families in general have low standards and there is much shiftlessness.

In Philadelphia, the old small streets among which South Street is the main highway are lined with small row-houses, overcrowded and lacking repairs, and with water and toilets in the yards. Many of the ambitious families have moved away.

In New York, Columbus Hill formerly was the desirable district, with amusements, tenements in fair condition for their day, and intense racial community spirit similar to that of to-day in Harlem. Only a few good families are left. Tenements show thirty to forty years of hard wear, have dark rooms and are in an insanitary condition. Stoops are filled day and evening with gossiping women, loafing men and dirty children. Paving is noisy granite block, sidewalks are broken, buildings are defaced, and fire escapes are hung

with bright colored garments, badly washed. On the avenue along the river are filthy stores, pool-rooms filled with boys and men from morning to late night, with drunks and frowsy street-women, white and colored. Families are shiftless and content with poor housing so long as they need do little work,

In Buffalo, the large Negro colony overlaps the vice district, with families living in alley and rear houses, sometimes three deep on a lot. On Exchange Place near the railroad stations are lodging and furnished-room houses, sprinkled with cabarets and pool-rooms, filled with casual laborers, floaters, shiftless families and vicious men and women. No worse housing conditions can be found than exist in every large city in these lodging-houses, rooming-houses, light housekeeping apartments, and similar places where homeless men and women live. They are full or empty as work is plentiful or slack. Furniture is old and battered, walls, floors and ceilings are uncleaned, plumbing is abused and out of order, and landlords are indifferent after they receive an advance payment of rent. Within even a week after a thorough cleaning, conditions are as bad as ever.

In Chicago, there are many well-known districts of out-worn houses occupied at high rents, and whole blocks are given over to gambling houses, and black and tan cabarets. Their keepers, occupants and supporters are occasionally raided, but are generally politically protected by the weight of the Negro minority vote in city elections.

In speaking of Federal and South Dearborn Streets, a recent survey Says:

*A dozen years ago, a study of these streets showed that the neighborhood was so run down that the passerby was impressed with the dilapidation of the buildings, only 26 per cent. of which could be considered in good repair. The median rental was \$16.00. In the last months of 1924, with twelve years more of neglect and decay, the median rental for some of the same old houses was \$30.00 to \$35.00.<sup>1</sup>*

1 Living Conditions of Small Wage Earners in Chicago, p. 35.

In Gary, "bungaloes" were built twenty years ago to house unskilled workers in the steel mills, and are still rented. A bungalow is a barrack, two rooms deep, and six to ten rooms long, of the lightest construction that can be expected to



stand up, and set on posts. A narrow walk runs between each pair of bungalows, and each door and window faces a door or window across the passage, making any privacy impossible. A hydrant and a water closet at the end of each two rows represents the sanitary equipment, and the ground in the rear is kept sour and ill-smelling by slops thrown from back doors and garbage.

Rents are not low, but the old bungalows furnish shelter for the shiftless, ignorant, and vicious, and are kept filled; and an occasional new one, called a tenement, is erected.

In Indianapolis, ““Wild Cat Chute” lies in a section of unpaved, deeply rutted streets that often have no sidewalks, and are deep in mud in wet weather. Some of the streets have sewers, but there are still many privy-vaults in the yards. Row-houses, tenements, and old shacks offer poor housing. “The Bottoms” is a near neighbor, both districts being well known to the police and to the charitable.

Louisville has a large down-town area, with fair conditions in houses facing the streets, and extremely insanitary and unhealthful conditions in alley houses. Satisfied or ignorant families live in houses not fit for work animals; children are familiar with vice before they start to school ; and unattached men and women who work in tobacco factories lodge with families in overcrowded rooms.

Even the smaller towns do not escape these bad, poorly housed colonies. Salem Street in Lynchburg is matched by Davis Bottom in Lexington, and Willow Street in Knoxville. Houses are in a hollow, with side-hill drainage to a creek that occasionally overflows, and that keeps ground, walls and floors damp at all times. Drainage is poor ; the creek is often an open sewer and becomes very offensive when the water is low. Streets are deeply rutted and boards are laid down over puddles. These back-waters beside the active current of city life are places where much that is vicious and criminal occurs or is fostered. No child who lives in such an environment has any decent chance, and the adults are beyond redemption.

To keep these civic ulcers from poisoning the whole city, much more stringent municipal control is needed than in overcrowded, unhealthful areas where migrants get their first start.

## MIDDLE-CLASS NEIGHBORHOODS

According to census figures for 1920, 35,000 of the 61,000 colored population of Memphis live in the large southeastern area of the city. They were scattered in large colonies, in smaller settlements, and in units as small as a block over an area four miles long and two to three miles wide. A large part of the district was originally built up for wage-earners, and it is cut by railroads and spotted by factories. All kinds of homes from cottages to shacks were mixed together. Occasional blocks of cottages of four and five rooms were still occupied by owners who bought the houses years ago and are unwilling to move.

The pride of the colony is in the good houses, formerly built for well-to-do white families along Mississippi Boulevard, McLemore Avenue, and neighboring streets. These houses have been purchased in the past two to eight years by teachers, postal employees, skilled workmen, and salaried men who must live near their work. Two physicians have built homes, costing \$12,000 and \$15,000. Old houses sold for from \$4,500 to \$6,000. A woman undertaker bought a handsome old residence in large grounds and completely remodeled it. Thus a few high-class residence streets may be found in these middle sections. Many of the families own one, and some two, automobiles, the children go away to college, and a high standard of social and community life is maintained.

The speculative builder and contractor is much in evidence in these middle-class areas. Long rows of houses exactly alike, occasional tenements and arks, a sprinkling of shacks, all built for rental returns and of cheap construction, can be counted by thousands, and house the largest number of families. Water supply and toilets are in the yard and are often shared by two or more families. There is a general air of unthrift, and a lack of any attempt to make the houses attractive, rather than any positive bad construction or sanitary conditions.

Unless curbed by strict city ordinances and enforcement, these rental neighborhoods fill up with houses that are not weatherproof, and that have too few rooms and inadequate sanitary conveniences.

In Dayton, Negro families are gradually taking over a large area on the near West side containing substantial houses originally built for white wage-earners. Fifth Street is developing with colored business places, offices, and amusements, together with rooming-houses. The cross streets are developed with good one-story and two-story frame houses

built twenty to thirty years ago. Streets are paved and have sewers and water. Houses of various sizes and prices meet the needs of various kinds of families. A street of handsome old residences is gradually changing character, and some of the houses have been offered for sale to Negroes. A few houses on side streets have already been sold to them.

Many of the blocks in this district are deep and irregular, with alleys cutting through or making dead-ends. There are already indications of exploitation of the land in the interior of these large blocks. An owner of a double house facing a street has constructed two tenement-houses on the rear of the lot, gaining rentals from ten families. Each family has 780 square feet, the land overcrowding is comparable to that of any large city, and all standards of decent housing are ignored.

Housing conditions south of Fifth Street are still less satisfactory. Houses are of less desirable types, and are among factories and railroads. Some areas are built up with cheap, two-story, four-room houses, greatly in need of paint and repairs. The spaces between houses are narrow, and yards are shallow.

Two prominent colored churches close to some of the worst alley housing have no apparent interest in improving conditions. Sheds and shacks made over into houses, additions built to existing houses so that virtually all the lot is covered, dim or dark rooms, and one-room dwellings in tenements, create a slum condition.

## HOME-OWNING NEIGHBORHOODS

High rentals, room overcrowding, and scarcity of dwellings have tended to foster one desirable improvement in housing conditions. In every city, small outlying settlements are growing up where land is cheaper, and where Negroes can afford small houses and use street cars or automobiles to reach their working places. Houses are small, and sold on terms within the means of unskilled wage-earners, but community life is active and ambitious.

Whenever a good school building is erected near or in these settlements, buying increases rapidly, and families move out to make permanent homes. Too often, however, the board of education delays the erection of good schools until the settlement is rather large.

The new colony of Lonsdale, just on the edge of Knoxville, has grown so rapidly without direct city influence that an analysis is interesting. The men make day wages of \$2.50 or \$3.00. About half the women go out to work as domestic servants, but tend to stay at home as soon as the husband's income permits. It takes twenty-five minutes to go down-town by street car, and there the young people go for recreation; but the fathers and mothers seldom leave the neighborhood except to work, and spend what they make on their homes, their church, and their friendly life. Census figures showed 43 rented houses in 1920, and 41 owned by the occupants. In 1925, a house-to-house card study made by a teacher showed 223 families, an increase of 139 in five years. There were 139 houses owned by the occupants, 78 rented and 6 regarding which the status was not given. Most of the houses are small, of frame construction, and set in good-sized yards.

Of these, 31 per cent. have three rooms, 46 per cent. have four or five rooms, and the remainder are very small or very large. There were 452 adults, including 22 lodgers, and 429 children. Only 54 family groups had no children.

In the larger family groups there is considerable overcrowding of rooms. In 27 families there was excessive overcrowding, considering the total number of persons; but because most of the children were small, its effects were not so bad. Eight persons in two rooms was the worst case found; but in this case the family owned its home and planned to add rooms.

Rents differ widely for the same kinds of houses, depending on various conditions.

The vitality of a community in which 60 per cent. of the families are buying homes cannot be questioned. Any city could afford to help a community of this kind by putting in public improvements as rapidly as possible.

At Morgan Park, near Chicago, is another rapidly growing suburban colony. It was an old, small settlement until about 1915, with houses built on cheap, low land, badly in need of drainage. Some colored city employees, familiar with methods of getting improvements, moved in and secured drainage, a little paving, and some sewers. Further extension of sewerage and paving and improvement of schools is contemplated.

In housing, this colony presents a very ragged appearance. It has grown rapidly since 1920. Many of the older houses,

and some of the new ones, are of the typical small, suburban type, well kept and attractive. Several hundred have been built by sections, starting with one, two, or three rooms. Often the owners themselves build them or hire carpenters by the day to do the work. Houses are enlarged by adding rooms, as the family can afford this. Porches and improvements are put in slowly. The effect is that of a boom-town, with temporary shelters run up in a hurry. This type of sectional shack building is found in many new home-owning sections. It is owing, in part, to the difficulty of financing.

However, 25 per cent. of the houses are fully paid for and 50 per cent. are more than half paid for. Many of the good homes started with one or two rooms, and were improved as the money was earned, the owners keeping out of debt. A believer in the future of the settlement said, "Our houses seem poor to eyes accustomed to rows of bungalows and cottages, all exactly alike. Our houses are not so neatly finished, but they are comfortable, full of hope, and not loaded with debts. There are home-loving families in all of them."

A large part of the change in Negro neighborhoods in both the North and the South comes through home-buying. Always since freedom, Negroes have had the desire to own homes. Even in slavery an occasional Negro earned the money to buy himself, his wife and his children, and to own his home. The buying of homes has been as large a factor in the establishing of neighborhoods in the North as in the South. A fuller discussion of home-buying may be found in Chapter VIII.

## MUNICIPAL IMPROVEMENTS

In the large central Negro districts which Negroes have inherited from former residents, sewers are sometimes inadequate for the increased density, water mains put in for single family houses are made to supply large tenements, and paving of old types is worn into rough surfaces. The city is usually busy developing new territories and pays no attention to these old districts, in which it would be difficult to get the property owners to stand the expense of improvements.

In these old districts, also, there is apparent neglect from city departments charged with plumbing installation and repairs, with sanitation and garbage and rubbish removal. Local improvement associations must be very active to have laws and ordinances enforced.

Families who break away from the large old central colonies, and move into newer districts, sometimes gain the advantage of more recent improvements on the main streets. These families are on about the same economic level, are intelligent, and know how to obtain service from the city. It was found, however, that the people in nearly all these colonies were reluctant about standing the cost of improvements, particularly of paving for new streets, partly because owners were already making heavy payments on houses purchased, and in part because landlords were unwilling to stand for improvements in rental property.

The disadvantage of outlying colonies is that they must usually wait many years for sewers, water mains, street lights, sidewalks, and especially for paving. For inexpensive housing developments, land is often chosen that is undesirable because of topographical features or neighboring uses.

In some cities the areas occupied by Negroes are those in which engineering obstacles make improvements difficult and land cheap. Until colored families learn that such properties are undesirable investments and bad from a health standpoint, these unimproved spots will continue to exist.

In several cities it was noted that health departments had to be patient with small property holders in the matter of connecting their homes with sewers and water mains, because the expense would be a serious drain on their limited income. Negroes, like the wage-earning groups of white people, are handicapped by lack of facilities for securing loans. In Lexington this situation has been met by the adoption of a plan whereby sanitary improvements can be paid for in installments, like paving.

The most rapid outlying development has taken place in Memphis; and while the suburban colonies there are generally supplied with sewer and water, the pavements, sidewalks and lights are very poor. In Louisville, Richmond, Knoxville, Lexington and Charleston, the outlying Negro sections are quite poorly supplied with municipal improvements.

The side streets of southern Negro neighborhoods are especially unattractive. The mud and ruts are often so deep that ambulances and fire engines cannot penetrate them. Street lights are far apart, leaving dangerous dark blocks.

In a study of Negro neighborhood conditions of Dallas, which furnish a fairly good sample of conditions in the

average southern city, an endeavor was made to ascertain the number of families whose travel to and from their homes in going to church, to school, or to street-car lines, was impeded by poor condition of streets. The results of the canvass follow:

Number of families unimpeded..... 162 or 13 per cent.  
Number of families somewhat impeded..... 239 or 19 per cent.  
Number of families almost entirely impeded  
(especially in wet weather) ..... 839 or 68 per cent.

*"The serious hindrance and at times complete inhibition from attendance at school, church, etc., not to speak of its becoming quite a factor in preventing the fulfillment of work engagements,"* are illustrated by these figures.

Cities such as Louisville are fairly well paved except in outlying districts; and cities such as Atlanta, Memphis and Richmond have made commendable progress in paving the main arteries through Negro sections, but the side streets are still in deplorable condition. Cities of the type of New Orleans and Charleston, where municipal improvements are very expensive by reason of the necessity for filling and draining, have neglected their Negro sections. In the smaller cities, neglect is the rule rather than the exception; yet improvements could be made even in these places, as is evidenced by the progressive city of Winston-Salem, which is 100 per cent. paved, and by Lynchburg, which is 100 per cent. sewered in spite of engineering difficulties.

It is because of the exploitation by land owners and of disregard by the cities that ambitious families wish to leave these neglected spots. Their moving from the back alleys and congested blocks into better sections of town is a healthy sign of progress. Yet if the districts to which they go abut on white districts, the moving families are accused of trying to inconvenience their white neighbors by moving among them, and are humiliated and often subjected to violence.

The lesson for the cities is plain. Each city needs neighborhoods supplied with municipal improvements into which the better-class Negroes can move without opposition. These neighborhoods should be protected from exploitation by zoning and tenement laws, and should be made attractive by the installation of paving, lighting, sewerage, schools, and playgrounds. Only when neighborhoods of the kind are developed will the movement of Negro population within the city be stabilized.

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## ON WRITING FOR THE FILMS

BY W. SOMERSET MAUGHAM

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I know very well that it is unbecoming in me to express my opinion on the subject of writing for the screen, since I have busied myself with the matter only for a few weeks. But in these weeks I have learned a good deal and I pretend only to jot down my first impressions. Everyone now allows that the pictures have reached a stage where they can no longer be treated with a contemptuous shrug of the shoulders. If you are of a pedagogic turn of mind, — as apparently many authors are in these days, — and wish to improve your fellow men, there is no medium which gives you a greater opportunity. You read your newspaper cursorily and what goes in at one eye goes out of the other. But what you see at the pictures impresses you with peculiar force. It may be deplored that the novelist and the playwright should think it their business to preach; but apparently they often do, too often, perhaps; and they are fortunate enough to find many people who are willing to take them with the utmost seriousness. They can certainly expound their views of life more effectively on the screen than between the covers of a book or even within the three hours' traffic of the stage. The screen is an unrivalled method of propaganda. This was widely realized during the war, but the means employed were ingenuous and sometimes defeated their own object. Little allowance was made for the frailty of human nature, and the pill of useful information was so little coated with sugar that the wretched public refused to swallow it. I shall not forget seeing a picture in a remote province of China which showed the President of the French Republic shaking hands with the Minister of Public Works. This was designed to impress the wily Oriental with the greatness of France, but I do not believe it achieved its object. If on the other hand a writer aspires to be no more, and no less, than an artist, the film is not unworthy of his consideration. There is no reason why the picture should not be a work of art.

But on this question the attitude of many of those who are concerned with the production of pictures is somewhat depressing. For if you wander about the studios you will find that some of the more intelligent men you meet are frankly pessimistic. They will tell you that the whole business is no more than a trick. They deny that there can be any art in a production that is dependant on a machine. It is true that for the most part the



attempts that are made at an artistic result support this argument. There are directors who desire to be artistic. It is pathetic to compare the seriousness of their aim with the absurdity of their achievement. Unfortunately you cannot be artistic by wanting to be so; but the lamentable results of these endeavors, often so strenuous and so well-meaning, must be ascribed rather to incapacity in those who make them than to unsuitability in the material. You will not achieve art in a picture by composing pompous titles or by bolstering up a sordid story with the introduction of a Russian ballet or a fairy tale. The irrelevant is never artistic. The greatest pest of the moment is the symbol. I do not know how it was introduced into the pictures but I judge that it was introduced successfully; the result is that now symbolism is dragged in by the hair. Nothing, of course, can be more telling, nothing has greater possibilities; but it must be used with tact, appositeness, and moderation. To my mind there is something grotesque in the way in which an obvious symbol gambols, like a young elephant, through the middle of a perfectly commonplace story. No, the gentlemen who direct pictures will not make them works of art in this fashion. I think they would be well advised to set about the matter more modestly. There is a good deal of spade work to be done first. The sets might occupy their attention. They have yet to discover the aesthetic value of simplicity. They will learn in due course that the eye is wearied by a multiplicity of objects. They will not crowd their rooms with furniture and knick-knacks. They will realize the beauty of an empty wall.

Then I think they can profitably occupy themselves with the subject of line. It is distressing to see, judging by the results, how little thought is given to the beauty that may be obtained from graceful attitudes and harmonious grouping. The lover can clasp his beloved to his heart in such a manner as to make an exquisite pattern; but unless he is a very fortunate young man, whom the gods especially favor, he will not do this by the light of nature. I have been amazed to see how often the lovely heroine has been allowed to be photographed in a position that makes her look like a sack of potatoes. I venture to think also that those directors who pursue beauty (I have nothing to say about those who merely want to produce a picture that will bring in a million dollars: I have no doubt they know their business much better than I do) might explore more systematically the photographic possibilities of atmospheric effect. The camera is capable of a great deal in this direction, and the delight of every audience at the most modest attempts in this field, such as scenes by moonlight, show that the public would not be unresponsive. There is immense scope for the director who wishes to make beautiful pictures; but the Reinhardt of the screen has not yet arrived.

It will appear from these observations that I think the director should be definitely an interpreter of the author. Since I am a writer it is perhaps natural that I should have little patience with his claim to be a creative artist. I think he has assumed this impressive rôle because in the past he has too often been asked to deal with material which was totally unsuited to the screen. He could produce a tolerable picture only by taking the greatest liberties with the story he was given, and so he got into the habit of looking upon the story as a peg upon which to hang his own inventions. He had no exalted idea of the capacity of his audience (the commonest phrase upon his lips was: Remember that my public doesn't consist of educated people. It is not a two dollar public it is a ten and fifteen cent public) ; and — if I may say so without offense — he was no genius. The stories he offered to an eager world were inane. For the most part the motive was absurd, the action improbable, the characterization idiotic; and yet so novel was the appeal, so eager the desire for this new amusement, that the public accepted all these defects with a tolerant shrug of the shoulders. The mistake the director made was in supposing the public did not see that they were defects. The most successful showmen have always credited the public with shrewdness. Now that the novelty of the pictures has worn off, the public is no longer willing to take these defects so humorously. They find them inconvenient. It seems to me that a few years ago I did not see bored people in a cinema: now I see them all around me. They raise their voices in derision. It is refreshing to hear the burst of laughter which greets a pretentious title.

The picture companies are discovering, what the theatrical managers might have told them long since, that no matter how eminent your stars and how magnificent your production, if your story is bad the public will not bother with you. The picture companies have put a bold face on the matter. They have swallowed their medicine with fortitude. They have gone to the highways and hedges and constrained the author to come in. They have brushed aside his pleas that he had no wedding garment: the feast was set.

The story is now all the thing.

It remains to be seen how the author will meet the situation. I do not think it will be surprising if he does not create very great works of art, for they come as the gods will, sparingly, and should be accepted with surprise and gratitude, but not demanded as a right. It is very good to receive a barrel of caviare now and then, but for the daily meal one should be satisfied with beef or mutton. At all events there will be no excuse for the author if his stories are not coherent and probable, if his psychology (to use the somewhat pompous term by which the play of motive is

known in the world of pictures) is not reasonable, and his characters and the incidents he chooses to illustrate them not true to life.

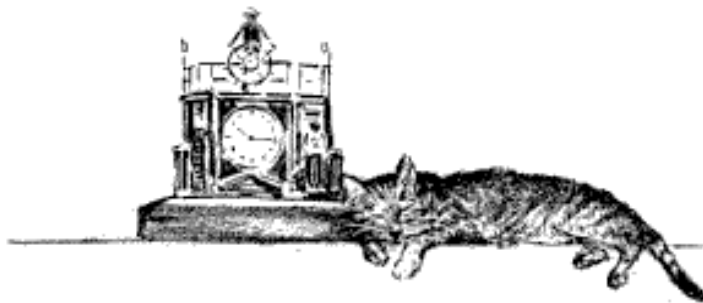
In the past probably the worst pictures have been those which were made out of plays. Because there are certain similarities between moving pictures and plays it was thought that a successful play would make a good picture and, what is more eccentric, that an unsuccessful play might do the same. The fact that a play had been acted in London or New York was supposed to be a valuable asset, and for all I know this may be a fact. But it was constantly found either that the play offered insufficient material, or material of a character that was useless on the screen. We have all seen pictures purporting to be versions of well-known plays and found the most outrageous travesties. And what is more, they were dull. The fact suggests itself that the play as a play is seldom suited for the screen. When you write a play you take an idea from a certain angle. You quickly learn how much you have to eliminate, how ruthlessly you must compress, and how rigidly you must stick to your point. But when the result of these efforts comes to the screen only a bare skeleton remains. The director is not to be so bitterly blamed when he claims that he has had to invent a story to clothe these naked bones. The technique of the modern stage is very sharply defined, and to my mind the modern play as it stands has very little to give the pictures. The moving picture much more suggests the plays of the Elizabethans. But of course an idea can be looked at in all sorts of ways and there is no reason why a story which has proved effective on the stage should not prove equally effective on the screen. It must be written entirely anew from that standpoint. I think a writer might make a good picture from a theme upon which he has already written a good play, but he will probably need incidents other than those which he has used in the play, and, it may be, different characters. He is absurd if he expects real invention to be done by the scenario writer to whom the management who has bought his play will entrust the work of arranging it for the screen. That is work that he alone can do. No one can know his idea as well as he, and no one can be so intimately acquainted with his characters.

I think there is more to be said for the screen version of novels, since here the case is reversed and it is not a matter of expansion and elaboration but of selection. I do not see why very good pictures should not be made from novels. They will serve as illustrations for those who have read them, and may induce those who have not to do so. This may be a good enough thing. It depends on the novel. For myself I look forward to the time when, the present dislike of costume having been overcome, all the great novels of our literature are shown on the screen. I hope, however, that the scenarios which must be prepared for

this purpose will be devised by a writer who is not only acquainted with the technique of the film but is also a man of letters and of taste.

But in my opinion all this in relation to the screen is by the way. I venture to insist that the technique of writing for the pictures is not that of writing for the stage nor that of writing a novel. It is something betwixt and between. It has not quite the freedom of the novel, but it certainly has not the fetters of the stage. It is a technique of its own, with its own conventions, its own limitations, and its own effects. For that reason I believe that in the long run it will be found futile to adapt stories for the screen from novels or from plays — we all know how difficult it is to make even a passable play out of a good novel — and that any advance in this form of entertainment which may eventually lead to something artistic, lies in the story written directly for projection on the white sheet.

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## **THE CAT COMPARED WITH OTHER ANIMALS**

THE MODERN CAT: Her Mind and MANNERS (1928)  
An Introduction to Comparative Psychology  
By Georgina Stickland Gates, Ph. D.

*Cats I loathe, who, sleek and fat,  
Shiver at a Norway rat.  
Rough and hardy, bold and free,  
Be the cat that's made for me,*

*He whose nervous paw can take  
My lady's lapdog by the neck,  
With furious hiss attack the hen,  
And snatch a chicken from the pen.*

—Dr. Erasmus Darwin (37).

Believing that the experimental method is superior in accuracy to the method of anecdote, we may ask the comparative psychologist to tell us not only what feats cats can learn and how that acquisition takes place, but also, if he can, how cats compare in ability with other animals. We have seen that human methods of learning frequently, though not always, resemble cat methods of learning. Do chickens and monkeys proceed in similar ways? The dog is commonly described as being more intelligent than the cat. Is this true? How does the cat compare in speed of learning or acuteness with her ancient enemies, the mouse or rat, or with the raccoon, or the horse?

The investigations which make possible a comparison of various species have a more important function. They attempt once more to demonstrate whether the cat or other animals show evidence of the possession of ideas, of learning by thinking rather than learning by eliminating useless movements. The college professor who has been thrown in the swimming pool will be able to recall his experience, to call up mentally a picture of the pool, perhaps he will hear—again mentally—the sound of the splash, perhaps he will feel, when he is telling the story, his own struggling movements. He will at least be capable of thinking in some fashion or other about the event which is not now present. Does the cat have a similar mental image of the box from which she escaped, of the loop which she pulled, or a similar thought about her experience? When temporarily absent from her nest in the woodshed does she carry about with her a mental image of five grey kittens snuggled together in the straw or seem to hear their faint cries? Does she anticipate her adversary, the neighbour's cat, and, in her absence, see her as large, snarling, striped, with protruding claws, or does she meditate on plans of attack?

We have seen that in learning to solve the problems described in the last chapter, the cat gives no evidence of proceeding by means of thoughts about the situation, ideas, or mental pictures. Several other ingenious experiments have been devised to test whether animals have (or use) memory ideas. Of these, five bearing especially on the problem of the cat mind will be reported here. Thorndike (52) performed the investigations which we have just

described, not only on cats but also on dogs, chickens and monkeys. Another observer (Shepherd) (44) compared the ability of monkeys, dogs, and cats in what he called "Adaptive Intelligence." Hamilton (20) contrasted the reaction to a simple apparatus of a normal man, a defective man, five normal boys, one defective boy, one infant, five monkeys, sixteen dogs, seven cats and one horse! The ability to delay reaction has been studied by a number of investigators, including Hunter (24), Yarborough (67), Walton (56), and Cowan (12), in the case of cats, dogs, raccoons, rats and children. Hobhouse (22) who tested not only his cat, Tim, but a dog, Jack, two elephants (Sally and Lily) and Billy the otter, failed to make accurate time records, and varied his procedure so much from animal to animal that no accurate comparison of species is possible from his experiment.

Thorndike (52) tried three dogs in boxes similar to those which he used with cats. The dogs were very much less vigorous in their struggles than the cats, they gave up sooner, seemed to pay attention to the food rather than to the process of escape. Their bodily structure is, of course, very unlike that of the cats and in this case there was a difference in motive too, for the dogs were not nearly so hungry; all of which makes a comparison of the species very difficult. Thorndike says, however, that it is his opinion that dogs are "more generally intelligent."

It was apparent that chicks were inferior to both dogs and cats in speed of learning simple performances and in the difficulty of the tasks which they could learn, and on the other hand, that monkeys were decidedly superior to all these animals. The monkeys not only learned to operate more complex mechanisms with greater speed, but employed a superior method of acquisition. After a successful operation of a mechanism they were much more likely, upon being tried again, to perform the correct movement immediately than were the cats. The curves for the cats showed, as we have seen, a process of slow learning by a "gradual elimination of unsuccessful movements, and a gradual reinforcement of the successful ones"; but the monkey curves showed a "process of sudden acquisition by a rapid, often apparently instantaneous abandonment of the unsuccessful movements and a selection of the ap-

appropriate one which rivals in suddenness the selection made by human beings in similar performances." (52) One might say the monkeys appeared to understand, to have some idea of the movement they were to make. The monkey seems "even, in his general random play, to go here and there, pick up this, examine the other, etc., more from having the idea strike him than from feeling like doing it. He seems more like a man at the breakfast table than like a man in a fight." (52)

The monkey in these experiments then often shows evidence of the possession of ideas. In an investigation by Shepherd (44) we get a further notion of the kind of feats which monkeys readily perform, and of which cats and dogs, if the experiment is conclusive, are incapable.

A monkey was confined in a cage. A piece of banana hung by a bit of string about twelve inches away from the cage beyond the reach of the animal. Thrust through the banana was a thin piece of wood which could be grasped by the monkey and the food thus brought in. Ten of eleven monkeys confronted by this situation immediately grasped the stick and secured the food. They did not hesitate, they did not first try to reach the food and in "fumbling about" accidentally hit the stick and so grasp it. They merely seized it and used it, possibly somewhat as we would use a spoon on which a piece of food had been placed or the stick which bears the lollipop. The monkeys were all able, furthermore, to secure food by pressing a lever and to pull in a bucket which had been attached to the end of a string.

Three dogs and two cats were tried with a similar stick thrust through a piece of meat. All five failed utterly! The situation was possibly made easier for the cats than for the monkeys, since the stick which was run through the piece of meat instead of hanging outside projected into the cage. All the cats needed to do in order to obtain their food was to claw in the stick, but they paid no attention to the stick. They scrambled madly and excitedly about the side of the cage. They failed similarly in the lever experiment.

Possibly we may explain the greater ability of the monkeys in these experiments as due to their

superior sensory and motor equipment. Monkeys can see much more clearly than can cats and dogs, they depend more on vision; furthermore, they are much more adept in using their paws, which are structurally quite different from those of the former animals. It may be that the monkey merely perceives the conditions more clearly and is also more adequate to deal with them. Or it may be that superior mental endowment enables him to understand the situation, to adapt to it in a way in which the cat does not.

In a third experiment, the intelligence of the cat is again contrasted unfavorably with that of certain other animals, including the monkey. Hamilton (20), whom we mentioned previously as contrasting the reactions of monkeys, cats, dogs, a horse, normal and defective human beings, both adults and children, used an apparatus which consisted of an entrance box with four doors leading to compartments containing food. The animal was placed in the entrance box. On each trial all of the four doors were shut; three were locked; one was shut but unlocked. The animal's problem was to discover the unlocked door, push it open, and thus have access to food. Efforts to open the locked doors would of course be unsuccessful. The unlocked door was always one of the three which had been locked on the immediately preceding trial; it was never the one which had on the previous trial given entrance to the food.

Success in this experiment might be roughly measured by the number of attempts to open various doors before the correct one was tried. A record of a large number of trials would mean that the animal was repeating efforts to open doors which he had just tried and found locked and was attempting, perhaps more than once, to enter the impossible door. Whereas in a series studied, eight normal human beings averaged 201 trials, a defective man's score was 217, a defective boy took 237, an infant 315, mature monkeys 291, young monkeys 275, mature dogs 313, and older puppies 333; mature cats averaged 352 trials and kittens 387. The feline records were only exceeded by those of very young puppies (377) and by that of the horse, admittedly a very stupid animal, who required 461 trials.

When the frequency of the various methods of



reacting to the situation were studied in the different animals, the cats again showed up very poorly. The most adequate method obviously would be that of making no effort to open the impossible door and of trying each of the possible doors but once. The greatest number of the trials of the adult human subjects were of this type. After a few attempts they "saw through" the situation and reacted in the most economical way possible. This method of responding was not found in the case of the cats, or in fact, of any of the infra-human animals. A second but inferior method would be to try but once each of the four doors, including that one which should have been eliminated because it was open in the immediately preceding trial. This was the method most frequently used by the defective man and by the monkeys and occasionally by the other animals. These individuals apparently did not realize that the unlocked door was never the one which had been open in the preceding trial, but did in some fashion "recognize" the futility of pushing repeatedly at one of the doors when one or more remained untried.

Such errors as repeatedly attempting to open a given door (with or without an effort to open another door intervening), or neglecting persistently one or more of the exits, was found most frequently in the dogs, cats, the infant and the horse. The mature cats made the mistake of trying the same door a number of times (without making any effort to open another door) and the mistake of persistently avoiding one door more often than did the dogs. One cat, for example, after meeting the situation for the ninety-fifth time, tried the doors in this order (when No. 3 was the open door)—No. 2, No. 1, No. 4, No. 2, No. 1, No. 4, No. 2, No. 4, No. 2, No. 1—and finally No. 3, the correct door. The author suggests that possibly the addition of more animals to his experimental group would efface these differences but adds that "the writer's experience with these two classes of subjects leads him to believe that the average cat is more prone to manifest" this type "of reaction than is the average dog."

Again we find the cat apparently inferior in the experimental situation to the human being, the monkey, and possibly, though not certainly, to the dog. She does not either get the notion of pulling

in food with a stick or see through a situation to the extent of recognizing even vaguely the futility of pushing repeatedly at a locked door or of neglecting persistently one particular exit. She is unable, within the limits of the experiment, to demonstrate that she can acquire what we might describe as complex and relatively abstract ideas. Is it probable that she does not possess even simpler ideas, that she has no imagery, no memory of events in the form of ideas or thoughts?

A fourth experiment puts her in a much more favorable light, at the same time that it gives us some information concerning a common activity of the cat, lying in wait for prey.

A cat is observed watching a mouse-hole for perhaps hours at a time. Why does she remain before this apparently uninteresting object neglecting opportunities to be petted, to play with the tassel of the curtain, to sleep in the corner? Does she recall the mouse which has gone down there or anticipate its return? If there were two mouse holes side by side, would the cat be able to "remember" down which hole her mouse had gone? How long would this interest in one hole continue to the exclusion of interest in the other? Must the cat keep her head and body pointed in the direction of the right hole or may she go away and returning "remember" the place? This ability to permit a pause to ensue between the application of the stimulus and the eliciting of the response has been studied in connection with the learning of a simple performance by two experiments, in one of which (67) it is possible to contrast the cat's capacity with that of the rat, dog, raccoon, and the human child.

Before it was possible to study their capacity for delay, it was necessary to give both animals and children a period of training. An apparatus was provided which looked roughly like the illustration on page 63. The cat was placed in the entrance box and a light was thrown on near the door of one of the three food boxes. The door with the light was unlocked and the cat might obtain food by merely pushing it open. The other two doors which were unlighted were locked tight and any effort to open them would be thwarted. The cat, then, if she would get food quickly, must learn always to go

to the box with the light, whether it was the first, second, or third, and thereby to avoid those doors which were unlighted. The cats were trained also with a buzzer. They learned to go to the door over which a buzzer was ringing and to avoid other doors. In this stage of the experiment, it may be observed, there was no delay, the reaction was immediate.

Fig. 11V—Ground plan of apparatus for delayed reaction. (After Washburn.) E is the entrance box; D, D2 D, the doors of the three food boxes; L, Lz L, the lights near these doors.

As might be expected the animals experienced much greater difficulty in learning to respond to the buzzer than they did in learning to respond to the light. The experimenter first records indifference to the sound. "Bess," he writes, "appears to give no attention to the buzzer' or she "walks about freely without noticing the buzzer." Later on she seemed to be distracted or worried by it. She stopped, turned her head, mewed, as if afraid. "Bess dislikes to go to the sound. She appears shy and afraid of the buzzer. She will venture to the door, stop, and squat, look up at the buzzer and sometimes rise up and 'sniff' at it before going into the box." (67) Later on we find her hesitating and wavering between boxes and finally attending strictly to the sound and reacting in accordance with it. She goes to the proper box from 90 to 100 per cent of the time.

We get the following table of learning times for the cat compared with those for raccoons, rats, dogs, and children in a similar (though not identical) experiment. (24)

Time required for Individual Animals to Learn Response.

Animals.

Raccoons (to light), 120, 340, 540, 825.

Dogs (to light), 560, 650.

Rats (to light), 280, 440, 250, 220, 480, 176, 175, 565, 800, 361.

Cats (to light), 180, 110, 170.

(to sound), 180, 70, 110.

Children.

Six-year-old and eight-year-old (to light), 6.  
Two-and-a-half-year-old (to light), 46.

The three cats in this experiment do better than any of the rats, or either of the dogs. These dogs, who appeared to be intelligent members of their species, but whose rate of learning was greater than that of the rats, were reported to be apparently helpless when no aid was given by the experimenters. They sat down and “howled” and behaved as though they were lonesome! The cats’ records are almost equal in ability to that of the most rapid of the raccoons, and superior to those of the other three raccoons. In so far as these figures are valuable at all, they demonstrate surprising speed of learning of the cats as contrasted with the other mammals.

The experiment performed on the children differed in certain ways from that on the animals. The former were shown a row of three buttons and told that one of them, if pushed, would make a noise, and that if they pushed the noisy button first they would be given a piece of candy. An electric light was switched on over one of the buttons (the one which would make a noise) but no mention of this was made to the children. After about six trials those of six or eight years perceived the relationship between the light and the noisy button and always pushed the right one. The two-and-a-half-year-old child took forty-six trials before she “understood the situation,” but even this was, as might be expected, shorter than the quickest learning time for any of the adult animals.

The problem was then rendered more difficult for both children and animals by the introduction of a delay between the application of the stimulus and the response. Here the situation is made more like that of the cat who watches the hole in which the mouse has disappeared. The light (or the buzzer) instead of being left shining (or ringing) above the proper door was first shut off just before the cat reached the box. When she showed herself undisturbed by this it was eliminated when she was halfway to the box; then the stimulus was stopped as soon as the animal had made her first move; and finally it ceased before the cat was allowed to go towards the food. She was kept from reacting for various lengths of time (from two seconds to six

seconds) between the extinguishing of the light (or the cessation of the buzzer) and her release. The problems here might be stated roughly as will she "remember" the proper door, for how long a time will she "remember" it, what does she do in the interval between stimulus and release; in other words, if she does remember how is this brought about?

Here we can compare the longest periods of delay in which successful reactions were frequent in the various animals. Whereas the eight-year-old child was able to delay for a half an hour and even to remember the correct button the next day, the child of two and a half only succeeded in delaying for 50 seconds, failing when she was kept for as long as one minute. The longest delay for the dogs was five minutes, the raccoons twenty-five seconds, and the rats and cats four seconds. The relatively poor showing of the cats is explained by the experimenter as due to the stopping of the training period too early, before the limit of ability was reached. Voluntary delays of greater duration (one of over a minute) were found when the cat, released by the experimenter, merely sat in the box, resting. With continued training the experimenter states, he is sure that they could delay a much longer period. When only two instead of three boxes were used, they were able to react successfully after intervals of from sixteen to eighteen seconds. If, then, there were two mouse holes side by side it is probable that the cat would "remember" down which hole the mouse had gone much longer than if there were three, but possibly, unless some other clue were present, not longer than twenty seconds. We find the cats and the children making relatively few persistent errors, that is going to the same box twice in the same trial, the rats, raccoons, and dogs making a much greater number.

The question of how the animals "remembered" the proper door is answered to a certain extent by observation of their behaviour during the period of delay. The cats always kept their heads or bodies pointed towards the door where the light had appeared. They merely went to the side to which either head or body was directed. If at the moment of release, they were not correctly oriented; if they had moved perhaps in the interval; if head or body were pointed toward a box where the light had not

been shining—they, nevertheless, “followed their noses” and attempted to open one of the locked doors. In this, their behaviour was like that of the rats and quite similar to the dogs’, but very different from the reactions of the children or even the raccoons. The children could remember which door they must open even though they had been distracted by hearing stories, playing about the room, or going out of doors during the interval. The raccoons were capable of correct guesses after they had been frightened so that they raced about the cage. The children, and possibly the raccoons, had some sort of idea or notion of the proper direction which they might recall from time to time. The cats, dogs, and rats apparently were capable of no such “memory idea.” They merely followed the impulse to go in the direction in which their bodies were pointed.

A further study of dogs (56), however, showed one at least to be capable of reacting correctly even when the cage in which he was confined was rotated (thus disturbing his position) or even when various distractions such as whistles, the sight of meat, etc., were introduced. This dog behaved in typical canine fashion when he made an error, sneaking back to the experimenter with his tail between his legs and his head down, and though no punishment of any kind was used, failed to lose his sheepish manner till he had been successful a number of times. When the cage was rotated and a delay required, he often spent his time scratching for fleas or taking little “catnaps.” As soon as the box began to swing back into position he was awake and was out of the door before it was half opened, and in spite of naps and flea hunting, more often right than wrong.

Another study (12) along the same line demonstrated that a cat also may remember a direction without maintaining her orientation. This experiment is noteworthy in that the cat was studied in her own home rather than, as is usually the case, in the laboratory. Thus the possible distracting influence of unusual conditions or abnormal environment was eliminated.

Mitzi was a pure-bred yellow Persian female cat six years old who is thus described: ‘In disposition she was entirely amiable and utterly fearless. She

had never met with anything but kindness and never showed a disposition to be anything but obliging." The experimenter says: "She was acquainted with me and very friendly toward me for some time before I began the experiments and during their progress she grew fond of me."

Mitzi sat on her mistress' lap in the living room opposite and equally distant from two doors, both of which led by varying paths to the kitchen. The experimenter appeared in one of these doors bearing the cat's little tin plate on which lay one piece of kidney. After looking in at the door the experimenter walked to the kitchen and placed plate and kidney under the stove, and then retreated to the porch from whence she could watch, without herself being seen, the cat's movements. If the cat entered the kitchen by the door at which the investigator had appeared, the animal was permitted to eat the meat. If she came through the other door, the experimenter entered quickly, picked up the cat and carried her back to the living room before she got to the meat. Ten tests a day were made for over two months,

Various intervals (from 10 to 30 seconds) were permitted to elapse between the appearance of the experimenter and the release of the cat. She was able to make a satisfactory number of correct responses even with thirty seconds delay (except on one quite understandable occasion when she, like the old-fashioned woman, was so distracted by the presence of a male of her own species in the house that her training failed utterly—she chose the wrong as often as the right and this in spite of the fact that the male was locked ignominiously in the basement). During her undisturbed working periods, however, Mitzi voluntarily lengthened the time of delay by playing with the stop-watch, pencil, or chart, thus bringing the period up to fifty, seventy, or even eighty seconds.

Precautions were taken to insure that she did not obtain her cue from smell, from some object (as a curtain) set in motion by the experimenter, or from her mistress on whose lap she sat in the first series of tests. The possibility that the mistress gave some cue by a slight movement, was ruled out, by substituting for her as a restraining influence a wire basket which was lowered over the cat and pulled up at

the proper moment by a pulley and string which were operated from outside the house. Under these conditions Mitze still chose correctly. Even when the experimenter merely appeared at the door bearing no plate and no kidney, or when an entirely unknown individual was substituted for the investigator, the cat was still able to respond properly. When, however, the experimenter did not appear, but only walked close to the door, in order to discover whether the sound of her footsteps and voice would be sufficient stimulus for the cat, she made a number of incorrect choices and finally "retreated behind an arm-chair in the living room and sulked." She required apparently a visual stimulus.

The most significant feature of the experiment is not perhaps the periods of delay (which do compare quite favorably with those described in the experiment just cited when only two choices were offered) or even the cues used but Mitzi's behaviour during the delay period. She did not maintain a constant orientation, nor invariably proceed in the direction in which head or body was pointed. She often stopped and played, thus turning around perhaps several times. She did not take a direct path to the door but first walked along a davenport, then jumped down, then chose one door or the other. Sometimes she is described as going to the middle of the room, stopping, looking each way, and then making a correct choice.

Now this behaviour is obviously much more like that of the children and the raccoons described in the previous experiment, than it is like the procedure of the rats or even of the dogs and cats there mentioned. The animal knows where she is going, and knows it in some fashion other than that implied by direct bodily orientation. Perhaps we have here some evidence that cats may anticipate a movement before it is made, that they may have some notion of the direction which they intend taking after an interval, and that this notion may be similar to what we describe as an idea or perhaps an image.

Of course we need many more careful experiments of this character before our conclusions can be anything but speculations. Only one animal was studied here. Such experiments as this last might easily be repeated by other individuals on pet cats. The investigators might discover not only how their



particular animals compare in speed of learning and in the possibility of delay with those already tested, but might gather some interesting data regarding the cat's method of acquiring such reactions, and the possibility of her using other clues than bodily position in "remembering." Experiments on pet animals have the disadvantage that they are often not performed with scientific accuracy, the advantage that the animal is tested in a familiar situation. Such a condition as this last would favor the appearance of memory ideas if they exist.

With regard to the comparison of the cat's learning ability with that of other animals, we find these experimenters agreeing with the common-sense notion that the cat is inferior in learning ability to the monkey and superior to the chick and the rat. She appears to be considerably brighter than the horse and possibly, though not certainly, as clever as the raccoon.

One investigator shows her to be decidedly less intelligent than the dog, one finds no reliable difference since both species failed equally at the task which he set them, the fourth reveals the cat to be much superior in speed of learning. We may attribute this variation in opinion to the fact that in each case different animals of possibly different grades of ability were used, and tasks varying in complexity given them. Perhaps there is actually little difference between dog intelligence and cat intelligence, and perhaps those discrepancies which do appear are caused by differences in motor and sensory capacity, or by the fact that whereas the cat habitually attends to the task at hand, the dog usually watches the master. Certainly the experiments give no support to the popular notion that dogs are universally and surely superior in speed of learning to cats.

Our queries concerning the possession of ideas and images by the cat have resulted in evidence which seems to be on the whole more negative than positive. The method which the cat employs in learning to escape from locked boxes does not imply that she makes any use of memory images or ideas. She fails to acquire such complex and fairly abstract notions as would possibly be essential for solving such problems as that of drawing in a piece of meat

on a stick or that of discovering one unlocked door among four. She does not in these experiments perceive the relationship between stick and meat, or learn which one of the four doors will surely be locked, or that persistently neglecting one door or pushing repeatedly at another will be futile. She seems at first sight to be incapable of using any cue other than that of the immediate position of her body, in "remembering" in which direction to go, though a second experiment seems to show her at least in one case capable of some other method of recall. Probably, like most mammals, if she has ideas, thoughts, images, she uses them infrequently. It seems very improbable that she often pictures her absent kittens, her coming battle, or the mouse which has disappeared down the hole. Possibly she merely maintains her position before the hole because of the persisting odor of rodent which lingers about it, or because of slight sounds which she may hear down the hole. She may have occasional ideas and images of such objects as mice; if she does, the evidence is that they are probably few. To this point we shall return in the concluding chapter.

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## **OBSERVATIONS ON BATS OF CORDOBA AND LA PAMPA PROVINCES, ARGENTINA**

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Bat faunas of a particular region or area generally are less known than other groups of mammals because of the difficulties associated with collecting bats. In central Argentina, particularly in Cordoba and La Pampa Provinces, earlier reports have included a number of localities for several bat species for which information regarding distribution, reproductive data, measurements, and habitat information is available (Crespo et al, 1961; Pomes and Massoia, 1967; De Santis and Justo, 1978; Montalvo et al, 1988; Siegenthaler et al, 1990a; 1990b; Barquez and Ojeda, 1992; Vaccaro, 1992; Mares et al, 1995). Nevertheless, little is known about the presence of some bat species in a particular area, and therefore information regarding reproduction, meristics, and ecology is lacking. In addition to the

species mentioned in this report, *Histiotus macrotus* (Poepig, 1835) and *Molossus ater* (E. Geoffroy, 1805) are known from single locality records for Córdoba Province; Villa Cura Brochero, San Alberto Department (Barquez and Ojeda, 1992) and Alta Gracia, Santa María Department (Fomes and Massoia, 1967), respectively.

In central Argentina, it is possible to observe the convergence of a wide array of phytogeographical regions, such as the Monte Desert, dominated by creosote-bushes (*Larrea* sp.); the Espinal, generally considered an extension of the Chaco or an impoverished Chaco without quebracho trees, is characterized by xerophilous scrub forests dominated by *Prosopis* trees; the Pampean grasslands; and towards the west and south, the Patagonian shrub-steppe (Cabrera, 1976). In each of these regions, an intermingling of subtropical and temperate faunas occurs. The Pampean Sierras, interspersed in an otherwise overwhelmingly flat country, offer the opportunity for the development of endemism and the isolation of species of Patagonian or Andean affinities (Polop, 1989). Additionally, salt flats with their associated biota of halophilous communities, form distinct units in the landscape, and harbor a unique mammalian fauna (Braun and Mares, 1995).

## METHODS AND MATERIALS

Since 1980, collections and observations of bats were made in different localities (Figure 1), but especially in the south of Córdoba Province. In La Pampa Province, most specimens were obtained during La Pampa Vertebrate Survey Plan de Relevamiento de los Vertebrados de la Provincia de La Pampa (RVP) collecting activities (Siegenthaler et al., 1990 a, b). Collecting areas were generally rural settings in agricultural and grazing land, and sites with buildings in which roosts and maternity colonies were sometimes found.

Bats were captured with the use of mist nets and by hand. Nets were placed in tree groves, around buildings, in discharge tunnels and mine shafts, and on the faces of cliffs. On a few occasions, an air rifle or a .22-caliber firearm with dust shot were used to obtain crevice dwelling mastiff bats (*Eumops perotis*) and out of reach tree bats (*Lasiurus cinereus*). Skeletal remains of two specimens (*Tadarida brasiliensis*, *Eptesicus*

diminutus) were obtained from barn owl (*Tyto alba tuidara*) pellets. Measurements were made with digital calipers and forearm length was taken on fresh specimens. Linear measurements are in millimeters. Times are in hours. On a few occasions, embryos were collected and some specimens were karyotyped. Specimens were prepared as skins and skulls. Specimens from La Pampa Vertebrate Survey (RVP) are deposited in the Museo Provincial de Historia Natural, Santa Rosa, La Pampa, Argentina. The mammal collections of the Universidad Nacional de Rio Cuarto (UNRC), Rio Cuarto, Cordoba, Argentina, and the Museum of Texas Tech University (ITU), Lubbock, Texas, also were used for obtaining information and measurements.

Figure 1. Map of central Argentina depicting collecting localities in Cordoba and La Pampa provinces. Locality numbers referred to the gazetteer.

## ACCOUNTS OF SPECIES

### Family Phyllostomidae

#### ***Desmodus rotundus***

(E. Geoffroy, 1810)

Specimens examined (20).— Cordoba Province: Calamuchita Department, Segunda Usina, (TTU 64320 and UNRC 111-112); Pocho Department, Chancani, Estancia Aguas Blancas (TTU 66464-66475 and UNRC 113-116); Rio Cuarto Department, 10 km W Espinillo, Estancia La Cautiva (UNRC 110).

Comments. — This species has been sighted commonly in Cordoba Province (Crespo et al., 1961, Barquez and Ojeda, 1992).

At Segunda Usina, a colony of about 15 males inhabiting the discharge tunnel of the dam, was netted when exiting. Species collected at the same location included *Myotis levis dinellii* and *Histiotus montanus*. Other bats collected nearby included *Eumops perotis*, *E. bonariensis bonariensis*, *Tadarida brasiliensis*, *Lasiurus blossevillii*, and *Lasiurus cinereus*, thus making Segunda Usina the locality with the highest diversity of bat species in this report. At this place, Chaco Serrano forest, cliffs, rock outcroppings, and hills were characteristic features. At Estancia Aguas Blancas, Chancani, a horizontal shaft at an abandoned gold mine surrounded by Chacoan scrub forests provided a home

for hundreds of vampire bats. At the time of capture (2 April 1983), pregnant females possessed embryos with crown-rump lengths of 34 and 37 mm and forearm lengths of 21 and 24. In June 1995, several specimens were netted 100 m from the mine while exiting at dusk (1900) and upon returning to the mine at 2100. Two nursing young (forearm length 49) were found with their mothers. At an abandoned house at Estancia La Cautiva, Espinillo, a single male for this species was found roosting inside a closet. This record represents the southernmost locality in Argentina. The vampire has benefited from human activities which have provided food (livestock) and refuges (buildings, mines, tunnels), thus, probably allowing for an expansion into areas not previously inhabited by the species (Crespo et al., 1961). The distribution of the vampire bat is limited by its capacity to withstand cold temperatures; it would be distributed within the limits of the 10° C minimal winter isotherm. In the present case, this locality is almost outside these limits (McNab, 1973).

Means and ranges of selected measurements for 16 adult specimens (9 males, 7 females) from Cordoba Province, Pocho Department, Chancani, Estancia Aguas Blancas, are: forearm length (65.06, 62.00-69.00); greatest length of skull (25.02, 24.13-26.11); condylobasal length (22.74, 21.66-23.44); least inter-orbital breadth (5.39, 4.93-5.94); zygomatic breadth (12.34, 11.78-13.08); breadth of braincase (12.66, 12.39-13.32); length of maxillary toothrow (3.66, 3.40-4.06); mandibular toothrow (4.79, 4.38-5.12); and greatest length of mandible (15.51, 14.74-16.22).

#### Family Vespertilionidae

#### ***Eptesicus diminutus***

Osgood, 1915

Specimens examined (1).— La Pampa Province: Loventue Department, Victorica (Escuela Agro Ganadera) (from owl pellet, RVP 227).

Additional records.— The only record for this species (as *Eptesicus fidelis*) in La Pampa Province was provided by De Santis and Justo (1978) for Toay Department, 25 km S Luan Toro.

Comments. — The only reference for the habitat that this bat species utilizes in La Pampa is given by De Santis and Justo (1978), in which they stated that it

inhabits cavities in Calden trees (*Prosopis caldenia*), in a general habitat of Espinal forests. There are very few records of this bat in Argentina, which is distributed in Buenos Aires, Santa Fe, Misiones, Jujuy, Corrientes, Salta, and Tucuman Provinces (Barquez and Ojeda, 1992, Mares et al., 1996).

***Eptesicus furinalis***  
(d'Orbigny, 1847)

Specimens examined (21).— Cordoba Province: Pocho Department, Chancani, Estancia Aguas Blancas (UNRC 117); Rio Cuarto Department, Coronel Baigorria, Estancia San Gonzalo headquarters (TTU 64321). La Pampa Province: Capital Department, Santa Rosa (TTU 64322-64332, UNRC 118-121), 10 km E Santa Rosa, Estancia Don Hipolito (RVP 228); Guatrache Department, Guatrache (RVP 231); Loventue Department, 30 km W Victorica, Estancia La Elenita (RVP 143); Toay Department, Cachirulo (RVP 229), Parque Luro (RVP 230).

Additional records. — La Pampa Province: Lihuel Calel Department, 10 km N Cuchillo Co, Estancia El Alamo (from owl pellet; Tiranti, 1992). Toay Department, 25 km S Luan Toro, Estancia La Florida and Loventue Department, Carro Quemado (De Santis and Justo, 1978). For Cordoba Province this species is recorded from in Bialet Masse (Punilla Department); and Cruz del Eje (Cruz del Eje Department) (Barquez and Ojeda, 1992).

Comments. — In Santa Rosa, La Pampa Province, these bats were captured repeatedly with *Tadarida brasiliensis* in a warehouse where the bats roosted in cracks and holes among cinder blocks and beams. In Estancia La Elenita, a bat was found roosting under the bark on the trunk of a Calden. In Santa Rosa, many *Eptesicus furinalis* individuals were young of the year, volant juveniles with cartilaginous metacarpophalangeal joints (24 January 1991). Lactating females were found in Santa Rosa on 13 December 1990.

Localities in La Pampa Province mostly represent remnants or modified patches of the Espinal Biome including deforested land. The southern portion of the Espinal is composed of Calden forests. These are open forests with trees 8 to 10 m in height and a ground cover

of grasses (Cabrera, 1976; Cano et al., 1980).

In Estancia San Gonzalo, Coronel Baigorria, Cordoba Province, one specimen, a lactating female, was netted on 4 January 1991 in riparian forest of mostly exotic tree species along Chucul Creek. The surrounding habitat was agricultural and grazing land. Other bat species present at this locality were *Tadarida brasiliensis*, *Lasiurus blossevillii*, and *Myotis lewisii*.

In Estancia Aguas Blancas, Chancani, Pocho Department, Cordoba Province, a specimen was captured with a mist net along an irrigation canal surrounded by Chacoan scrub vegetation.

Means and ranges of selected measurements of nine adult specimens (1 male, 8 females) from La Pampa, Capital Department, Santa Rosa, are: forearm length (43.62, 42.20-46.20), greatest length of skull (16.29, 15.80-16.67); condylobasal length (15.86, 15.20-16.56); least interorbital breadth (4.07, 3.94-4.30); zygomatic breadth (11.58, 11.24-11.89); breadth of braincase (7.82, 7.69-8.00); length of maxillary toothrow (6.13, 6.01-6.24); mandibular toothrow (6.67, 6.47-6.96); and greatest length of mandible (12.07, 11.78-12.54).

### ***Histiotus montanus***

(Philippi and Landbeck, 1861)

Specimens examined (10).— Cordoba Province: Calamuchita Department, Segunda Usina (TTU 64333); Rio Cuarto Department, Espinillo, Estancia La Cautiva (TTU 66476-66480, UNRC 122-125).

Additional records. — Cordoba Province: San Alberto Department, Pampa de Achala (Polop, 1989). Also, Barquez and Ojeda (1992) provided various localities of this species in this province.

Comments. — The long-eared bat was found occasionally in buildings in Cordoba Province, Rio Cuarto Department, Espinillo, Estancia La Cautiva. Roosts included the spaces between wooden beams and the channels of metal or fibercement roof sheets, in which the bats were in a horizontal position. On one occasion, 11 pregnant females were observed inside a big crack in the wall of a small building. A few of these were collected (1 November 1983) and had embryos

with crown-rump lengths of 15-16. Inside a window frame of an abandoned house, 40-50 adults and volant juveniles were observed forming a big clump, giving the idea that this bat forms maternity colonies. Lactating females and volant juveniles were found 27 December 1984. The surrounding habitat was riparian forest alongside the Cuarto River, with patches of grasslands, and crops, and tree groves nearby.

Means and ranges of selected measurements of four adult females from Cordoba Province, Rio Cuarto Department, Espinillo, Estancia La Cautiva, are: forearm length (48.00, 46.00-50.00); greatest length of skull (17.86, 17.55-18.13); condylobasal length (17.05, 16.74-17.24); least interorbital breadth (4.35, 4.18-4.43); zygomatic breadth (11.47, 11.26-11.67); breadth of braincase (8.41, 8.21-8.59), length of maxillary toothrow (6.44, 6.38-6.51); mandibular toothrow (6.99, 6.94-7.01); and greatest length of mandible (12.41, 12.21-12.53).

Means and ranges of selected measurements of subadult (volant young with cartilaginous metacarpophalangeal joints) specimens (1 male, 4 females) from the same locality as above are: forearm length (47.40, 46.00-49.00); greatest length of skull (17.43, 17.14-17.63); condylobasal length (16.36, 15.85-16.86); least interorbital breadth (4.36, 4.21-4.44); zygomatic breadth (10.43, 10.28-10.55); breadth of braincase (8.15, 7.89-8.35); length of maxillary toothrow (6.19, 6.00-6.32); mandibular toothrow (6.82, 6.62-6.96); and greatest length of mandible (11.96, 11.58-12.42).

### ***Lasiurus blossevillii***

(Lesson and Garnot, 1826)

Specimens examined (11),— Cordoba Province: Calamuchita Department, Segunda Usina (UNRC 132); Rio Cuarto Department, Rio Cuarto, (UNRC 126-131), Coronel Baigorria, Estancia San Gonzalo headquarters (TTU 66481-66482). La Pampa Province: Capital Department, 10 km E Santa Rosa, Estancia Don Hipolito (RVP 232), Guatrache Department, Laguna Chillud (RVP 233).

Additional records. — La Pampa Province: Maraco Department, General Pico, as *L. borealis blossevillii* (Crespo, 1974). Barquez and Ojeda (1992) provided various localities for Cordoba Province as *L.*



borealis.

Comments .— *Lasiurus blossevillii* has a complicated taxonomic history. This taxon sometimes is treated as a subspecies of *borealis*, but may in fact warrant specific status. Baker et al. (1988), using information derived from protein electrophoresis, separated *borealis* from *blossevillii*, regarding the latter as a full species and considered *Lasiurus borealis* to be restricted to the eastern United States. Later, Morales and Rickham (1995) postulated that the northern and southern populations of *Lasiurus blossevillii* may represent separate species.

Most *Lasiurus blossevillii* specimens were found in pine and *Celtis* sp. trees in Segunda Usina, and acacia and palm trees in Rio Cuarto. In Santa Rosa (10 km W), La Pampa, one volant juvenile with cartilaginous metacarpo-phalangeal joints was netted with two *Epiesicus furinalis* individuals in the yard of a rural home (11 February 1989). The habitat of the area was Espinal with *Calden* trees. One female specimen was obtained while clinging to small twigs on a barranca in Laguna Chillhue (8 May 1988). In Estancia San Gonzalo, Coronel Baigorria, two volant juveniles with cartilaginous metacarpo-phalangeal joints were netted in riparian habitat alongside the nascent Chucul Creek, with forests of *Ugustrum*, *Salix*, and *Populus*, with patches of grasslands, crops, and tree groves in the surrounding areas (13 January 1990). Volant juveniles (with cartilaginous metacarpal phalangeal joints) and a lactating female were found on 6 January 1983 at Rio Cuarto. The bats formed clumps composed of adult females and young. One clump was made up of nine individuals, and two clumps of 4 individuals, were located in the upper branches of acacia trees.

Means and ranges of selected measurements of six adult specimens (2 males, 4 females) from Cordoba Province, Rio Cuarto Department, Rio Cuarto, are: forearm length (42.83, 41.00-44.00); greatest length of skull (12.13, 11.58-12.60); condylobasal length (11.98, 11.53, 12.46); least interorbital breadth (4.31, 4.16-4.40); zygomatic breadth (9.01, 8.74-9.33); breadth of braincase (7.54, 7.21-7.76); length of maxillary toothrow (4.01, 3.72-4.27); mandibular toothrow (4.70, 4.38-5.06); and greatest length of mandible (8.85, 8.09-9.30).

**Lasiurus cinereus**

(Beauvois, 1796)

Specimens examined (4).— Cordoba Province: Calamuchita Department Segunda Usina (UNRC 135); Rio Cuarto Department, Rio Cuarto (UNRC 133-134). La Pampa Province: Toay Department, ca. 30 km W Santa Rosa, Estancia Quitrahue (RVP 234).

Additional records. — Cordoba Province: Punilla Department, Bialet Masse (Barquez and Ojeda, 1992). La Pampa Province: Maraco Department, Colonia San Jose (Montalvo et al., 1988).

Comments. — Hoary bats were found roosting in acacia trees in Rio Cuarto and tala trees (*Celtis* sp.) in Segunda Usina. In Rio Cuarto, three specimens, an adult lactating female and volant juveniles, were obtained in an acacia tree, whereas other individuals roosted isolated from one another (6 January 1983).

An unusual find of this species was made inside a warehouse in Estancia Quitrahue, Toay Department, La Pampa Province (29 October 1993), where the general area habitats are Espinal forests.

Selected measurements of two adult specimens (1 male, 1 female respectively) from Cordoba Province, Rio Cuarto Department, Rio Cuarto, are: forearm length 53.00, 54.00; greatest length of skull 14.23, 15.74; condylobasal length 14.42, 15.74; least interorbital breadth 5.26, 5.74, zygomatic breadth 11.20, 12.12; breadth of braincase 9.32, 9.48; length of maxillary toothrow 5.13, 5.62; mandibular toothrow 5.84, 6.34; and greatest length of mandible 11.01, 12.30.

**Lasiurus ega**

(Gervais, 1856)

Specimens examined (2).— Cordoba Province: Rio Cuarto Department, Rio Cuarto (UNRC 136-137).

Additional records. — Cordoba Province: Besides Rio Cuarto, the species has been recorded for Colon Department, Rio Ceballos and Capital Department, Cordoba (Barquez and Ojeda, 1992). La Pampa Province: Capital Department, Santa Rosa (as *Dasypterus*; Montalvo et al., 1988); Maraco Department, General

Pico (Crespo, 1974).

Comments. — In Rio Cuarto, the southern yellow bat was obtained among the dead leaves of palm trees and yuccas. This species has been reported to roost in palm trees (Fornes and Massoia, 1967; Crespo,

1974), and it seems possible that this bat could have benefited by finding suitable habitat owing to the planting of palm trees.

Selected measurements of an adult male from Cordoba Province, Rio Cuarto Department, Rio Cuarto, are: greatest length of skull 15.34; condylobasal length 15.04; least interorbital breadth 4.90; zygomatic breadth 11.15; breadth of braincase 8.64; length of maxillary toothrow 5.10; mandibular toothrow 6.12; and greatest length of mandible 11.72.

### ***Lasiurus salinae***

Thomas, 1902

Specimens examined (1).— La Pampa Province: Atreuco Department, N border of Salinas Grandes de Hidalgo (RVP 235).

Comments, — This represents the first record for La Pampa Province of this species of tree bat, which was originally described as a subspecies of *L. borealis* by Thomas (1902). Barquez (1987) synonymized this taxon with *Lasiurus borealis blossevillii*, but recently Mares et al. (1995) tentatively revalidated it to species rank. This species apparently inhabits the halophytic communities that surround salt flats. As stated by Mares et al. (1995), this bat is darker than the otherwise similar *Lasiurus blossevillii*, with which it is sympatric in some localities. Previous records include localities in Catamarca, San Juan, Tucuman, and Cordoba Provinces (Mares et al. 1995). The bat was found dormant in a small hollow at 2 m height in the loess bank surrounding the salt flat of Salinas Grandes on 2 May 1989. This locality in La Pampa Province is indeed a large salt flat which harbors halophytic communities in its margins, and is surrounded by Chacoan-like Espinal thorn-scrub forests. The adjacent areas are pastures and croplands. Braun and Mares (1995) have shown that these salt flats harbor a unique mammalian fauna, which has a unique and shared evolutionary history with the accompanying biota. The finding of specialized mammals that inhabit these salt flats, such as

Andalgalomys and Salmomys (Braun and Mares 1995), provide additional biogeographic support for the recognition of *Lasiurus salinae* as a distinct species. Nevertheless, genetic studies are needed before the systematic status of this species can be resolved.

Selected measurements of an adult male from La Pampa Province, Atreuco Department, Salinas Grandes de Hidalgo, are: forearm 39.00; greatest length of skull 11.65; condylobasal length 11.70; least interorbital breadth 4.28; zygomatic breadth 9.04; breadth of braincase 7.58; length of maxillary toothrow 4.13; mandibular toothrow 4.42; and greatest length of mandible 8.44.

### ***Myotis levis dinellii***

1. Geoffroy, 1824

Specimens examined (37).— Cordoba Province: Calamuchita Department, Segunda Usina (TTU 64334, UNRC 147-148); Cruz del Eje Department, Palo Parado (TTU 64335-64336); Pocho Department, Chancani, Estancia Aguas Blancas (TTU 66483-66488, UNRC 149-152); Rio Cuarto Department, 10 km W Espinillo, Estancia La Cautiva (UNRC 138), Paso del Durazno

(UNRC 139-140), La Gilda (UNRC 141-142), Coronel Baigorria, Estancia San Gonzalo headquarters (TTU 64337-64345, 66489-66491, UNRC 143-146). La Pampa Province: Calcu Caleu Department, Almacen El 52 (RVP 180, TTU 64346-64347); Lihuel Calel Department, Estancia Los Ranqueles (RVP 135-137); Utracan Department, Chacharramendi (RVP 236).

Additional records. — La Pampa Province: Chical Co Department, Agua de Torres (as *Myotis chiloensis dinellii*', DeSantis and Justo, 1978). Barquez and Ojeda (1992) provide several locality records for these bats in Cordoba Province.

Comments. — At our localities in Cordoba province, this bat, along with *Tadarida brasiliensis*, was the most common species. Both were found together in most rural buildings that were suitable as roosts. Pregnant females collected in Espinillo had embryos of 5 and 12 (1 November 1983), 13 and 16 mm (11 and 15 November 1981). In Paso del Durazno, pregnant females had embryos measuring 17 and 20 (27 November 1981). In Estancia San Gonzalo, Coronel Baigorria,

volant juveniles were found on 14 January 1990. and 1 aerating females were taken on 4 January 1991. Roosts in buildings included the spaces between wooden beams and between bricks used in sheet metal roofs. Some of the bigger cracks were shared with *Tadarida brasiliensis*.

Some specimens were netted at Segunda Usina in the opening of a discharge tunnel, along with *Desmodus rotundus* and *Histiotus montanus*.

In La Pampa, Caleu Caleu Department, Almacen El 52, three specimens were netted outside an abandoned house on 24 October 1990. There, the bats probably roosted in the cracks in the adobe and brick walls. The surrounding habitat in this area was Espinal Calden forests.

The La Pampa localities are in the Espinal and the wide Espinal-Monte Desert ecotone, which is formed by a mosaic of low forests ( *Prosopis caldenia* , *P. flexuosa* ), and the shrublands. In Estancia Los Ranqueles, *Myotis levis dinellii* inhabited a small warehouse along with *Tadarida brasiliensis*, where a loud and smoky diesel engine generated electricity\*

Means and ranges of selected measurements of 16 adult specimens (4 males, 12 females) from Cordoba, Rio Cuarto Department, Coronel Baigorria, Estancia San Gonzalo headquarters, are: forearm length (36.97, 35.00-38.00); greatest length of skull (14.56, 14.20-15.06); condylobasal length (13.88, 13.38-14.56); least interorbital breadth (3.59, 3.40-3.72); zygomatic breadth (8.92, 8.65-9.43); breadth of braincase (6.99, 6.68-7.48); length of maxillary toothrow (5.55, 5.36-5.73); mandibular toothrow (5.84, 5.23-6.06); and greatest length of mandible (10.50, 10.07-11.00).

Family Molossidae

***Eumops bonariensis bonariensis***

(Peters, 1874)

Specimens examined (1).— Cordoba Province: Calamuchita Department, Segunda Usina (UNRC 153).

Comments. — The single specimen representing the only record for Cordoba Province was collected from the beams of a small warehouse with a galvanized steel roof. *Tadarida brasiliensis* and *Myotis levis dinellii* also were taken from this site.

Selected measurements of an adult from Cordoba Province, Calamuchita Department, Segunda Usina, are: greatest length of skull (19.80), condylobasal length (18.54), least interorbital breadth (4.59), zygomatic breadth (12.12), breadth of braincase (10.29), length of maxillary toothrow (7.44), mandibular toothrow (8.12), and greatest length of mandible (13.92).

### ***Eumops perotis***

(Schinz, 1821)

Specimens examined (5).— Cordoba Province: Calamuchita Department, Segunda Usina (TTU 64348-64352).

Additional records. — For Cordoba Province, Barquez and Ojeda (1992) gave two localities in addition to Segunda Usina (Embalse Rio Tercero). They are in Sobremonte Department, Los Hoyos, and Capital Department, Cordoba.

Comments. In Segunda Usina, a colony of mas-tiff bats estimated to be around 20 individuals was located in March 1980 in a big crevice in the face of a 30 m high cliff with overhanging vegetation of Chaco Serrano. Any intent of counting the individual bats as they flew out was hampered by their extreme wariness. On several occasions the bats emitted very loud chirps while waiting to exit the crevice.

Two pregnant females were obtained at Segunda Usina, one with an embryo measuring 4 (20 September 1981), and the other with an embryo measuring 40 and a forearm length of 23 (1 December 1980).

Means and ranges of selected measurements of five adult male specimens from Cordoba, Calamuchita Department, Segunda Usina, are: forearm length (79.40, 77.00-81.00); greatest length of skull (32.06, 31.65-32.64); condylobasal length (31.14, 30.73-31.56); least interorbital breadth (5.69, 5.60-5.75); zygomatic breadth (19.35, 18.82-19.79); breadth of braincase (13.24, 12.95-13.60); length of maxillary toothrow (12.68, 12.55-12.83); mandibular toothrow (13.92, 13.56-14.22); and greatest length of mandible (23.67, 23.49-23.88).

Mo loss us mo loss us  
(Pallas, 1766)

Specimens examined (2).— Cordoba Province:  
Rio Cuarto Department, Rio Cuarto (UNRC 50, 154).

Additional records. — This species recently has  
been reported in La Rioja Province by Vaccaro (1992).

Comments .— Both specimens of this species in  
Cordoba were obtained in the city of Rio Cuarto. In  
one case, a small group of about six individuals was  
inside a ventilation shaft of an air conditioner outside a  
room of a sixth floor apartment building (September  
1986). The single specimen that could be captured was  
a pregnant female. The other specimen was netted  
among hundreds of *Tadarida brasiliensis* during pest  
control activities at the Universidad Nacional de Rio  
Cuarto campus.

Selected measurements of an adult specimen from  
Cordoba Province, Rio Cuarto Department, RioCuarto,  
Universidad Nacional de Rio Cuarto campus, are: great-  
est length of skull (17.35), condylobasal length (16.17),  
least interorbital breadth (4.13), zygomatic breadth  
(11.10), breadth of braincase (9.60), length of maxil-  
lary' toothrow (6.32), mandibular toothrow (6.94) and  
greatest length of mandible (12.12).

### ***Tadarida brasiliensis*** (L. Geoffrey, 1824)

Specimens examined (27).— Cordoba Province:  
Rio Cuarto Department, Rio Cuarto (UNRC 155), Las  
Higueras (UNRC 156), La Gilda (UNRC 157-158),  
Coronel Baigorria, Estancia San Gonzalo headquarters  
(TTU 64354-64356); Calamuchita Department,  
Segunda Usina (UNRC 159); Cruz del Eje Department,  
Palo Parado (TTU 64353). La Pampa Province: Capi-  
tal Department, Santa Rosa (TTU 64357-64361, UNRC  
160-162); Toay Department, Parque Luro (RVP 237);  
Lihuel Calel Department, Lihuel Calel National Park  
(observed); Estancia Los Ranqueles (RVP 138); Limay  
Mahuida Department, La Febrma (RVP 39); Loventue  
Department, Victorica(Escuela Agro Ganadera) (from  
owl pellet; RVP 238); Estancia La Elenita (RVP 144-  
145); Chical Co Department, La Humada (RVP 14-16);  
Rancul Department, Estancia Las Delicias (RVP 171);  
Puelen Department, Puesto Los Pajaritos, 5km N (RVP

239).

Additional records. — Cordoba Province: Punfilla Department, Bialeto Masse, La Cumbre; San Javier Department, Carrizal, Villa Dolores, (Barquez and Ojeda, 1992). La Pampa Province: Loventue Department, Carro Quemado (De Santis and Justo 1978); Puelen Department, Casa de Piedra (from owl pellet; Montalvo et al. 1984).

Comments. — The Brazilian free-tailed bat is one of the most common species we encountered. Free-tailed bats were found in abandoned and inhabited buildings both in rural and urban settings. In Rio Cuarto, specimens of *Molossus molossus* occasionally were netted with this species outside buildings.

In Segunda Usina, a specimen was obtained from a crack in the face of a cliff. In La Pampa, this bat was widespread. Information from the RVP localities places this species in a wide array of habitat situations. In Puesto Los Pajaritos, one individual was found sharing a crack in a boulder with a lizard (*Liolaemus austromendocinus*) in the slope of a barranca of sedimentary rocks. In Lihuel Calel National Park, a small colony of this species inhabited a crack on a small rock face.

Pregnant females were obtained in Estancia La Cautiva, Espinillo, Rio Cuarto Department, Cordoba, (1 November 1983) with embryos (crown rump 15), and in Paso del Durazno (27 November 1981) with embryos 25 and 27 and with forearm lengths of 13 and 14. Lactating females were obtained in Rio Cuarto on 21 December 1980, in Coronel Baigorria on 4 January 1991, and in Santa Rosa on 13 December 1990.

Means and ranges of selected measurements of eight adult specimens (3 males, 5 females) from La Pampa Province, Capital Department, Santa Rosa, are: forearm length (44.10, 43.00-45.70); greatest length of skull (16.88, 16.51-17.06); condylobasal length (16.03, 15.82-16.28); least interorbital breadth (4.06, 3.97-4.19); zygomatic breadth (10.05, 9.84-10.29); breadth of braincase (8.38, 8.15-8.58); length of maxillary toothrow (6.09, 5.98-6.20); mandibular toothrow (6.72, 6.65-6.89); and greatest length of mandible (11.74, 11.57-11.91).



## DISCUSSION

As Mares et al. (1995) have stated, information on bats in Argentina is still scanty. Some species of bats are known from some provinces by very few records. For example, the presence of *Eumops b. bonariensis* and *Molossus molossus* is confirmed for Cordoba Province by one and two specimens, respectively, each species from a single locality. For Cordoba Province, *Flistiotus macrotus* is known only from a single record (Barquez and Ojeda 1992), and *Molossus ater*, collected years ago, has not been found since (Fomes and Massoia 1967).

AH of the species mentioned in this report form part of the widespread Chacoan fauna, in which most of them are regarded as common or abundant (Barquez and Ojeda 1992). Clearly, the Espinal allows for the southward penetration of species linked to these scrub forests. In La Pampa, *Eptesicus furinalis* and *E. diminutus*, for example, appear to be restricted to areas

of *Prosopis caldenia* forests. Other species seem to reach their southernmost limits in this province, as in the case of *Myotis levis dinellii*. Nevertheless, it is expected that species of Patagonian or Andean affinities, such as *Myotis chiloensis* or *Lasiurus varius*, could be found eventually in western La Pampa.

## ACKNOWLEDGMENTS

J. Polop (UNRC) and G. Siegenthaler (RVP) permitted the use of the collections in their charge. SIT's work in La Pampa Province benefited in many ways from the actions, support and help received from N. Durango, G. Siegenthaler, E. Fiorucci, P. Borraz, M. Wrede and D. Albarracin, and was supported by the Subsecretaria de Cultura, thus contributing to the accomplishment of this report. In Cordoba, estancia administrators Angel and Daniel Iraneta (La Cautiva) are especially thanked for their hospitality and for allowing us to work there. M. Aguirre, F. Biole, E. Bogado, F. Lemme, R. Rossi, D. Torres, S. Torres and S. Tiranti helped in the field. SIT's stay at TTU is supported in part by the Direccion Nacional de Cooperacion

International, Ministerio de Cultura y Education, Argentina, and the Universidad Nacional de La Pampa, Argentina. Localities Loma Loncovaca (Estancia Las Delicias), Almacen El 52, La Humada, La Reforma, Puesto Los Pajaritos and Estancias La Elenita, Quitrahue, and Los Ranqueles, were sampled as part of La Pampa Province Vertebrate Survey. M. A. Mares (Oklahoma Museum of Natural History and Department of Zoology, University of Oklahoma, Norman, Oklahoma) identified the *Lasiurus salinae* and some specimens of *L. blossevillii*. J. Juste and F. D. Yancey are thanked for providing helpful comments for the improvement of the manuscript.

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## GAZETTEER

Localities are listed in alphabetical order. Numbers correspond to numbered localities in Figure 1.

L Almacen El 52: Caleu Caleu Department: La Pampa Province: *Myotis levis dinellii*.

2. Cachirulo: Toay Department: La Pampa Province:

*Eptesicus furinalis*.

3. Chacharramendi: Utracan Department: La Pampa Province: *Myotis levis dinellii*.

4. Chancani, Estancia Aguas Blancas: Pocho Department: Cordoba Province: *Desmodus rotundus* , *Eptesicus furinalis*, *Myotis levis dinellii*.

5. Coronel Baigorria, Estancia San Gonzalo headquarters: Rio Cuarto Department: Cordoba Province: *Eptesicus furinalis*, *Lasiurus blossevillii* *Myotis levis dinellii*, *Tadarida brasiliensis*.

6. Espinillo, Estancia La Cautiva: Rio Cuarto Department: Cordoba Province: *Desmodus rotundus*, *Histiotus mantanus*, *Myotis levis dinellii*.

I. Estancia Las Delicias: Rancul Department: La Pampa Province: *Tadarida brasiliensis*,

8. Estancia Los Ranqueies : Li hue! Calel Department: La Pampa Province: *Myotis levis dinellii*, *Tadarida brasiliensis*.

9. Guatrache: Guatrache Department: La Pampa Province: *Eptesicus furinalis* ,

10. La Gilda: Rio Cuarto Department: Cordoba Province : *Myotis levis dinellii* , *Tadarida brasiliensis*.

II. Laguna Chillhue: Guatrache Department: La Pampa Province: *Lasiurus blossevillii*.

12. La Huniada: Chical Co Department: La Pampa Province: *Tadarida brasiliensis*.

13. La Reforma: Li may Mahuida Department: La Pampa Province: *Tadarida brasiliensis*.

14. Las Higueras: Rio Cuarto Department: Cordoba Province: *Tadarida brasiliensis*.

!5. Lihuel Calel National Park: Lihuel Calel Department: La Pampa Province: *Tadarida brasiliensis*.

16. Palo Parado: Cruz del Eje Department: Cordoba Province: *Myotis levis dinellii*, *Tadarida brasiliensis*.

17. Parque Luro: Toay Department: La Pampa Province: *Eptesicus furinalis*, *Tadarida brasiliensis*.
18. Paso del Durazno: Rio Cuarto Department: Cordoba Province : *Myotis levis dinellii*.
19. Puesto Los Pajaritos, 5 km N: Puelen Department: La Pampa Province: *Tadarida brasiliensis*.
20. Rio Cuarto: Rio Cuarto Department: Cordoba Province: *Lasiurus blossevillii*, *Lasiurus cinereus*, *Lasiurus ega*, *Molossus molossus*, *Tadarida brasiliensis*.
21. Salinas Grandes de Hidalgo, N border: Atreuco Department: La Pampa Province: *Lasiurus salinae*.
22. Santa Rosa: Capital Department: La Pampa Province: *Eptesicus furinalis*, *Tadarida brasiliensis*.
23. Santa Rosa, 10 km E, Estancia Don Hipolito: Capital Department: La Pampa Province: *Eptesicus furinalis*, *Lasiurus blossevillii*.
24. Santa Rosa, ca. 30 km W, Estancia Quitrahue: Toay Department: La Pampa Province: *Lasiurus cinereus*.
25. Segunda Usina: Calamuchita Department: Cordoba Province: *Desmodus rotundus*, *Histiotus montanus*, *Lasiurus blossevillii* , *Lasiurus cinereus*, *Myotis levis dinellii*, *Eumops bonariensis bonariensis*, *Eumops perotis*, *Tadarida brasiliensis*.
26. Victorica (Escuela Agro Ganadera): Loventue Department: La Pampa Province: *Eptesicus diminutus*, *Tadarida brasiliensis*.
21. Victorica, 30 km W, Estancia La Elenita: Loventue Department: La Pampa Province: *Eptesicus furinalis*, *Tadarida brasiliensis*.

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## ORCHIXOS

by Bill Jennings

Colorado Native Plant Society NEWSLETTER

January-February 1983

At least 21 and probably more species of wild orchids are native to Colorado.

Several more species may eventually be found in the state. Two likely candidates are *Halimolobos ebbesenii* (Reichenbach) O. Ktze, and *Microsclerophrys* (Lexarza) O. Ktze.

Orchids are small, obscure, rare orchids seldom seen by the general public, and hence they really do not have common names, although addersmouth has been applied to some species. The two species in question occur in the high, dry plateau

country of Mexico, Arizona and New Mexico. A third species, *ft. mortophyllos* (L.) Swartz, has been collected a few times in Colorado.

In the Denver Botanic Gardens "Green Thumb" (Vol. 40, No. 1, Spring 1983) I suggested that these orchids should be looked for in extreme southern Colorado. Dr. William A. Weber (personal communication) had indicated that *ehrenbergii* had been reported in an environmental impact statement (CEIS) filed by Kaiser Steel. Kaiser has coal mines in Colfax County, New Mexico, about ten miles south of the Colorado state line and about thirty miles west of Raton.

After a series of letters and phone calls, a meeting was set up with Kaiser personnel on August 19, 1983, to search for the orchids along the Colorado-New Mexico state line.

My wife, Susan, and I met with Marcia Wolfe, reclamation ecologist, who was our guide. She showed us the mine's herbarium sheets of the orchids. They had two specimens of *ft. ehrenbergii*, one of which had white flowers instead of the usual burgundy purple. A single specimen of *ft. macrostachys* (sometimes called *jaiei* L. O. Williams) was also seen. These collections were made in New Mexico but very near the state line.

*ft. macrostachys* *ehrenbergii* was common at two sites in New Mexico on steep, mossy, north-facing slopes at elevations in the 7500-8000 foot range. The first is adjacent to the coal wash plant tailings pond near the mine, about 9 1/2 miles from the state line. The second was in Spring Canyon, near Vermejo Park at the Bartlett mine site about 4 1/2 miles from the state line. Time did not permit visiting the *ft. macrostachys* site, which is in wild country north of the mine, about 2 1/2 miles inside New Mexico. The site is on a flat hilltop between Patten Canyon and the Right Fork of York Canyon at



8500 feet.

Areas searched in Colorado were immediately adjacent to the state line in the headwaters of Spring, Gonzales, and Wet Canyons, Immediately south of Tercio townsite. The orchids were not found, but some areas did have good habitat. Orchids *Boody^ra obXongifolia* Rafinesque and

*Corstl lorchiza* sp. were seen. The elevation in the areas searched is about 9000 feet and this may be too high and cold for the orchids. Perhaps around 8000 feet is more appropriate and areas at this elevation in Colorado along the state line would be due north of the mine rather than northwest.

The area bounded roughly by Colorado State Highway 12, the Crest of the Sandre de Cristos, U. S. Highway 4, and Interstate 25 (roughly Colfax County, New Mexico, and the southwest quarter of Las Animas County, Colorado), about a million acres, is all private land controlled by CFSel Steel, Kaiser Steel, and Pennzoil, and as a consequence is very poorly botanized. Permission is required for entry-

In conclusion, it seems just a matter of time until the orchids will be found in Colorado, I intend to get together with MS. Wolfe again this coming summer\*

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## **THE LATEST MENACE OF THE MOVIES**

by Walter Prichard Eaton.

THE NORTH AMERICAN REVIEW

vol. ccx ii. — no. 776. 6

A person of taste and intelligence, who frequents the theatre in New York with discrimination, finds much to interest and stimulate him, and would be hard put, perhaps, to realize how utterly barren of solid dramatic fare the smaller cities of the country are. To these smaller cities a generation ago came most of the well-known "stars" and most of the successful plays, stopping for a night and pass-

ing on. Sometimes there would be one visitor a week, sometimes two, three, or even more if the city was large enough to support so many. Since the development of the motion pictures, however, there has been an astonishing change. Shown at first in small, cheap houses down a side street, the movies progressed rapidly into the main thoroughfares, and then took possession of the playhouses themselves. The managers for a while looked upon them as a gap-filler, something to keep the doors open and the pennies coming in, after Sothorn and Marlowe left on Tuesday, until John Drew came on Friday. But it was not long before the managers discovered that the profits from the films were more than the profits from the plays ; a film is rented for a comparatively small fee, and no part of the receipts has to be shared, nor paid out to stage hands. Besides, it was not long before the small city public, by and large, developed a preference for the " silent drama," in part because it was cheaper, in part because it was less of a tax on the attention. Pittsfield, Massachusetts, a city of over 40,000 people (I cite it because it is near my home), had one theatre devoted to legitimate drama. Even within a decade, this theatre has housed for two seasons an excellent stock company, and on its stage have appeared players like Mrs. Fiske, Ethel Barrymore, and John Drew. During the past winter, barring a musical comedy or two advertised on its salacious appeal, there have been, as I recall, a scant half dozen dramas of the so-called first class presented in the city, and one of them was a new play being tuned up for an opening in New York. The theatre is now, in reality, only a movie house. There are not less than four other movie theatres in the city — and one small book store! So far as Pittsfield is concerned, the spoken drama might not exist, even on the printed page. Does any critic complain that our dramatists write only for Broadway? Good gracious, it is that, or nothing!

But now the movies are invading Broadway itself, in a new and startling form. Backed by enormous capital,- real or potential — the product of their prosperity, and the goodwill of Wall Street looking for fresh investment fields — certain movie companies, notably one called " The Famous Players-Lasky Corporation," are actually controlling the production of spoken dramas. Why should they trouble to do this? Because they are desperate for material, and they have discovered that a popular play, especially if it is acted by a popular player, starts its subsequent career as a movie with the great advantage of prestige and aroused expectancy. " Broadway " is still a magic word beyond the Mississippi — even just beyond the Hudson; and, oddly enough, men and women who will not cross the street to see a spoken

drama in Pittsfield, Massachusetts, think more highly of a movie if it is acted by a Barrymore, and based on some drama they have read about. I do not know — probably nobody knows — how many thousands of movie theatres there are in America today. There are so many, at any rate, that the demand for new picture stories to supply their screens each week is ludicrously in excess of any humanly possible ability to produce worthy material. Nine-tenths of all movies are bound automatically to be trash. Moreover, one follows so fast on the flicker of another, as they impinge on the jaded eyes and shallow brain of the typical spectator, that something violent is needed or something unusual to awaken his enthusiasm and renew his interest. The successful stage play supplies the movie producer with material that has been worked out already into an art form supposedly rather nearly allied with his own ; and it supplies an element of the unusual to awaken his patrons. That is the reason why the movie producers are invading Broadway.

For example, the Famous Players-Lasky Corporation has purchased the theatrical business of the late Charles Frohman, which includes control of the famous Empire Theatre, a playhouse with perhaps the highest and most exacting standard of any in the country. Frohman always reserved its stage for his best plays, his most accomplished actors — Drew, Gillette, Miss Barrymore, Miss Maude Adams. On that stage all this past winter Miss Barrymore has been acting *Declassee*, an extraordinarily successful though mediocre drama. It now seems certain that this play will be made into a movie, and Miss Barrymore will again act it before the screen. Probably, to be sure, exactly the same thing would have happened if her managers had not been a motion picture company; what troubles us is rather the wonder what the next play will be which this company mounts on the aristocratic Empire stage. What will become of those high dramatic standards when the new standard of ultimate fitness for movie production begins to operate at its full? — for, of course, as soon as a movie producer begins to select plays for the spoken stage, he will choose, as between two claimants, the one which seems to him the better adapted for subsequent use on the screen. He could not humanly do otherwise.

It has further transpired that it was a movie company which financed the production of Eugene O'Neill's grim naturalistic tragedy, *Beyond the Horizon* (which might seem, at first glance, to give the lie to the conclusion of the last paragraph), and the production of Arnold Bennett's *Sacred and Profane Love*, with Elsie Ferguson as the star. Furthermore, a movie company has publicly an-

nounced that it will back any producer who wishes to put on a play, provided it seems to them a play ultimately adaptable to the screen. Much would seem to depend upon what they consider adaptable to the screen. If they consider *Beyond the Horizon* adaptable, and if they consider the plays of G. B. Shaw adaptable (it is reported that \$1,000,-000 was offered to Shaw for the film rights to all his plays), then it might be said that it is a little hard to see just how the entrance of the movie companies into the "legitimate" field is going to do quite all the terrible things some of the managers say it is.

But do the movie magnates really consider these things adaptable? Would *Beyond the Horizon*, for example, even granting that it could be reproduced as a movie, have any elements of popularity with the average screen audiences? On the other hand, will the splendid critical praise it has won, and the admiration it has excited among the few who care for serious and searching art, be far-reaching enough to have any advertising value in Pittsfield, Massachusetts? It was warmly commended in our intellectual weeklies, but you cannot purchase even the mildest of our intellectual weeklies in Pittsfield, Massachusetts. Surely the movie companies are not interested in naturalistic tragedy for its own sake. If it shows no profits on the screen, exit naturalistic tragedy. Shaw's name, of course, is one to juggle with. Nearly everybody has heard of Shaw. But they had not when Arnold Daly took him up. Would a movie company have discovered *Candida* and *You Never Can Tell*? Would these plays have looked like promising movies? Try to imagine a movie of *The Importance of Being Earnest*, for that matter, or of *The Mollusk*. It seems a pretty safe assumption that only so long as the movie companies are content with a passive financing of dramatic production, leaving the managers and, far more, the actors, free as of old to pick what interests them for production, will the stage remain, even in New York, at its present level of intelligence.

One of the New York newspapers, interviewing various managers on the subject, drew from A. H. Woods, purveyor-in-chief of bedroom farces, the frank admission that he knew of two dramatic producers only who were primarily interested in the art of the theatre — Winthrop Ames and Arthur Hopkins. All the rest put on plays to get the most money out of them, and if more money was to be got by putting on such plays as best pleased the movie people, instead of such plays as best pleased the relatively small critical public in New York, why then their theatres would be more or less at the disposal of the movie crowd. This

is certainly meeting the motion picture producers quite halfway. It appears to mean the imposition on much of the spoken drama of the standards of the screen.

Probably no digression is needed in this place to show what those standards are. Any thoughtful person who has attended a half-dozen ordinary motion picture programmes knows the fatal restrictions of the medium, knows the complete absence from the average screen drama of intellectual body and balance, the complete absence, in fact, of everything which makes the spoken drama, at its best, so noble a thing, except the quick emotional appeal which can be roused by physical action, by pantomime and the expression of the human face — in short, by those elements of drama which can be photographed. Since a profound weakness of our native drama has always been its dependence on physical action, and it has only in comparatively recent years been painfully winning its way to higher things, the imposition upon it of motion-picture standards is most decidedly a step backward, even if all screen dramas strove for the utmost advance in artistic suggestion of which they are capable. Alas, however, very few of them do this. The vast majority are content with the trite, the obvious, the trashy and lurid, with slapstick farce and ridiculous melodrama; they are false to life, turgid, sentimental, the twentieth century substitute for dime novels and nickel shockers. When once our theaters begin to produce dramas not with an eye single to dramatic effectiveness, but rather to subsequent screen popularity, the serious dramatist, the ambitious actor, the artist in stagecraft, will be out of a job.

Temporarily, that is. I am by no means sure but that, in the long run, the result of this latest invasion by the Philistines will be beneficial. Arthur Hopkins, for example, is, as Mr. Woods says, one at least among the theatrical managers who is interested in the theatre as an art. He controls a playhouse of his own, wherein he has shown us plays like *The Jest*, Gorki's *The Lower Depths*, Tolstoi's *Redemption*, and *Richard III*. He has made a serious actor out of John Barrymore, and he has, above all others, given Robert E. Jones the opportunity to develop into a scenic artist of rare insight and power, ranking with the great Europeans. Since Mr. Hopkins has found an appreciative public for his theatre, and, apparently, has made a comfortable living, what is to prevent him from retaining all those artists whose devotion to the spoken drama and its allied arts is greater than their love of movie gold — and there are many such! — and establishing a repertory theatre? Again, the Theatre Guild, in its two years of existence, has given New York John Ferguson and Jane Clegg, as well

as other fine productions. It has developed scenic artists and actors. The spirit behind it is one of devotion to the arts of the theatre, not to Mammon, the God of the movies. What is to prevent its becoming another nucleus for a permanent theatre?

For a long time now we have proceeded in this country on the assumption that the only workable theatrical system is the ridiculously wasteful one of organizing a fresh company for every new play, and keeping that one company at that one play till every city in the country had seen it which wanted to. How far this system was a natural evolution, and how far it was artificially fostered by monopolistic control of the country's playhouses, is a question I cannot argue here. At any rate, anything which tends to smash this system is certainly not wholly a curse. Under any ideal system, a new play of importance would be presented simultaneously in a hundred theatres through the land, in each case by a fixed, resident company. Only thus can we ever develop anything approaching a national art consciousness, for only thus can all the country be considering the same things at the same time. And only through the existence of repertory companies can a place be made on our stage for the scores upon scores of fine plays which cannot reasonably be expected to run a hundred nights on Broadway, or anywhere else, and which hence are not now produced at all, because it would not pay to organize a special company for their presentation. The reason Europe has so many of these plays, and we so few, is because of the European system of production far more than because of any inherent superiority of talent among European playwrights.

Still further, under our present system Broadway is a chaos. The Empire Theatre has a standard, Mr. Hopkins' theatre has a standard, the Belasco Theatre has a standard — of a sort; but what others? Who, even the wisest, can predict from the name of a theatre the character of performance he will find therein? The managers say that play-production is a gamble. The public knows that play-attendance is I Amid such chaos, a repertory theatre, once established and known, would be a Gibraltar of stability, the shadow of a great rock in a weary land.

Well, suppose the Famous Players-Lasky company (the company, by the way, which made a movie of Barrie's Admirable Crichton and changed the name to Male and Female because they feared — perhaps with reason — that the public would think it was " something about the navy"!) do get control of half the theatres and three-fourths of the managers in New York and cause to be produced on their

stages only such spoken dramas as will please the kind of people who, in Pittsfield, Massachusetts, go to the movies three times a week, and such as will translate successfully into the silly trash and trumpery of screen dramas ;— what of it? If half a dozen managers and fine actors and brilliant scenic designers, who are in the theatre because they love it, because they are artists, stand true to the faith, there will inevitably be created half a dozen theatres with more or less permanent companies, where those remnants of the American people who still believe man has in his head and in his heart more things than can be conveyed by pantomime, lifted eyebrows and a well-aimed custard pie, may repair to hear the music of Shakespeare's verse, to sit under the spell of Robert Jones' suggestive scenery — so far removed from the stark and ugly reality of the camera — to follow the crackle of Shaw's wit, to listen to the whimsies of J. M. Barrie, to rouse to the challenges of Galsworthy's social passion; in short, to enjoy the noble art of the drama. Some order will emerge at last from what has long been chaos; the sheep and the goats will be sharply divided. There will be theatres ; and places of amusement. The dramatists who write not for the stage, but for the profits, will write for the places of amusement, merely filling in movie scenarios with dialogue, just as a host of our popular novelists are doing today. But the Rex Beaches and the Louis Joseph Vances and the Rupert Hughes have not caused Mr. Wells nor Mr. Walpole to give up in despair, nor our own Joseph Hergesheimer. There is still a place for literature in spite of the movies. There will still be a place for the drama, in spite of the movies. The invasion in the one field does not promise, in reality, to be any more serious than in the other, except that it demands a larger physical readjustment, since a play has to be viewed by a thousand people at once, in a theatre.

The future, of course, belongs to the theatrical artists of vision, ideals, impelling conscience. There are many of them. There have always been many of them. No other art has ever commanded a more undivided love, a more concentrated devotion, than the art of the spoken drama. Nor was this art ever more widely appreciated and studied by more thoughtful people than today, at the very time when it seems to be in such danger. Its professional followers, its host of amateur lovers, scattered hitherto, dividing their efforts, often wasting them, will, it is quite possible, be driven to find one another in union. The beginnings of true repertory theatres will first be made in New York, of course. But they will not stop there. If the movie companies and their allied theatrical managers control the theatres in other cities, booking for tour only their own attractions, then

repertory theatres will arise in Chicago, Indianapolis, San Francisco, and many other cities, even, perhaps, in the course of time in Boston, so that the minority who are not now and never can be satisfied with the trash of the movies may hear and enjoy the finer art of the drama. The prospect, after all, is depressing only as it shows the enormous hold the movies have on the mass of the American people. Any people who can be content with the false and sentimental twaddle of the average movie drama, even if it is low-priced, who can find relaxation in an art so childish and crude and utterly devoid of mental stimulation, utterly lacking, as a rule, in any call to the powers of concentration or reflection, utterly without beauty or glamor, is a people deficient, certainly, in mentality and esthetic sensitiveness. The true theatre could never have been for them, and the sooner the line is drawn sharply, the better for the theatre — if the worse for them. And yet — and yet— there is another possibility. There is a possibility that the movie magnates may discover, to their discomfiture, that the hundreds of thousands of Americans who still go to the theatre are not, after all, entirely devoid of civilized instincts. They may discover that Shakespeare and G. B. Shaw, Henry Miller and Mrs. Fiske, Galsworthy and John Barrymore, are admired because they possess just those qualities of beauty, glamor, intellectual body, finesse, which the movies lack, and that to produce plays which are mere scenarios with dialogue is not to court success but failure. The movie magnates may be driven either to let the players still have their own way, or retire from the field altogether. The Famous Players-Lasky company and the rest may be just a trifle like the famous frog in the fable. However, time will tell, and perhaps it is wisest to wait for the verdict of that unimpeachable authority.

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*The Anti-Christ of 2024, (Editorial Caption) by John W. Pierard*

## **THE ANTI-CHRIST**

BY Dr. George W. Carey  
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### **PART I.**

Primitive Christians, the Essenes, fully realized and taught the great truth that Christ was a substance, an oil or ointment contained especially in the Spinal Cord, consequently in all parts of the body, as every nerve in the body is directly or indirectly connected with the wonderful "River that flows out of Eden (the upper brain) to water the garden."

The early Christians knew that the Scriptures, whether written in ancient Hebrew or the Greek, were allegories, parables or fables based on the human body "fearfully and wonderfully made."

These adepts knew that the secretion (gray matter — creative) that issues, (secretes) from the cerebrum, was the source and cause of the physical expression called man; and they knew that the "River of Jordan" was symbolized in the spinal cord and that the "Dead Sea" was used to symbolize the Sacred Plexus at the base of the spinal column where the Jordan (spinal cord) ends, typifying the entrance of Jordan into the Dead Sea.

The thick, oily and salty substance composing the Sacral Plexus, "Cauda Equina," (tail of the horse) may be likened unto crude Petroleum, (Petra, mineral, or salt, and oleum — Latin for oil) and the thinner substance, oil or ointment in spinal cord, may

be compared with coal oil; and when this oil is carried up and crosses the Ida and Pingala (two fluid nerves that end in a cross in medulla oblongata where it contacts the cerebellum (Golgotha — the place of the skull) — this fluid is refined, as coal oil is refined, to produce gasoline — a higher rate of motion that causes the ascension of the airship.

When the oil (ointment) is crucified — (to crucify means to increase in power a thousand fold — not to kill) it remains two days and a half, (the moon's period in a sign) in the tomb (cerebellum) and on the third day ascends to the Pineal Gland that connects the cerebellum with the Optic Thalamus, the Central Eye in the Throne of God that is the chamber overtopped by the hollow (hallowed) caused by the curve of the cerebrum (the "Most High" of the body) which is the "Temple of the Living God" the living, vital substance which is a precipitation of the "Breath of Life" breathed into man — therefore the "Holy (whole) Ghost" or breath.

The Pineal Gland is the "Pinnacle of the Temple." The modus operandi by which the oil of the spinal cord reaches the Pineal Gland is described in Part II.

## PART II.

"There is no name under Heaven whereby ye may be saved except Jesus Christed and then crucified" (correct rendering of the Greek text).

Every twenty-eight and one-half days, when the moon is in the sign of the zodiac that the sun was in at the birth of the native, there is a seed or Psycho — Physical germ born in the or out of, the Solar Plexus (the Manger) and this seed is taken up by the nerves or branches of the Pneumo gastric nerve, and becomes the "Fruit of the Tree of Life," or the "Tree of good and evil" — viz : good if saved and "cast upon the waters" (circulation) to reach the Pineal Gland; and evil if eaten or consumed in sexual expression on physical plane, or by alcoholic drinks, or gluttony that causes ferment — acid and even alcohol in intestinal tract — thus — "No drunkard can inherit the Kingdom of Heaven" for acids and alcohol cut, or chemically split, the oil that unites with the mineral salts in the body and thus produces the monthly seed.

This seed, having the odor of fish was called Jesus, from Ichthos, (Greek for fish) and Nun (Hebrew for fish) thus "Joshua the son of Nun," "I am the bread of life;" "I am the bread that came down from heaven;" "Give us this day our daily bread."

The fruit of the Tree of Life, therefore, is the "Fish-bread"

of which thou shalt not eat on the plane of animal or Adam (earth-dust of the earth plane) : but to "Him that overcometh will I give to eat of the fruit of the Tree of Life" because he saved it and it returned to him in the cerebellum, the home of the Spiritual man, the Ego.

The cerebellum is heart shaped and called the heart in Greek — thus "As a man thinketh in his heart so is he."

The bodily organ that men in their ignorance call heart is termed divider or pump in Greek and Hebrew. Our blood divider is not the button that we touch when we think, but it is the upper lobe of cerebellum that vibrates thought. The lower lobe is the animal (mortal) lobe that governs the animal world — that section of the body below the Solar Plexus, called lower Egypt — natural body — kingdom of earth — Appollyon — the Devil (lived, spelled backward) Satan (Saturn governs the bowels), etc.

Fire and Brimstone (the lake of fire) comes from the fact that sulphur (brimstone) is the prime factor in generating the rate of motion called heat, and overeating develops a surplus of sulphur.

The Seed, born every twenty-eight and one-half days, making 13 in 365 days, that is 13 months, remains two and one-half days in Bethlehem (house of bread), then is carried up Pneumo (or vagus) gastric nerve and across the medulla oblongata and enters the cerebellum to remain two and one-half days, thus — "When Jesus was about twelve He appeared in the Temple teaching the doctors."

The age of puberty is about twelve. Then the first horn seed appears and the sensation caused by its vibration tempts the native on the lower plane to do the thing that slays it, which is fully explained in Genesis by the serpent — sex desire — tempting Adam and Eve (allegorical characters). From Krishna to Moses and Jesus serpents and Pharaohs and Herods have striven to slay the first born.

From the age of twelve to thirty in the life of Jesus nothing is recorded, for twelve refers to puberty, and 30 or 3 means physical, mental and spiritual, viz: body, (flesh or soul) fluids and Spirit (the Ego).

Breath is translated "soul" over 500 times in the Bible, therefore soul is precipitated air (spirit) which may be lost in physical desire and expression (waste or sin, viz: to fall short) or saved by Regeneration. Read Matt. 17-28; also 1st Epistle of John 3-9. So, at the age of 30, Jesus, the seed, began to preach to body,

soul and spirit, and as the seed was (or is) descending the spinal cord, the substance of which is symbolized by a formula of characters I. O. H. N. (as we symbolize water by H<sub>2</sub>O) it was baptized of John (not hy John). Synonyms: — Saul, John, Christ, Or (gold). Jordan (word. Lord, oil, ointment).

Baptize is from the Greek Bapto, the effect of two chemicals when they unite and produce force that neither possessed singly. Here the seed, immersed in the oil, John, was so increased in power that "The Spirit of God descended like a dove and a voice out of Heaven said, 'This is my beloved son,' " etc.

Jordan means the descender — Dove, (to dive, a diver — see dictionary). Thus Jesus, the seed, was the son of man — the carpenter or builder — until it was baptized in the precious ointment that was secreted from the Most High (brain) and descended the spinal cord and was thus given power to start on its journey to Jerusalem (God's City of Peace) and to be crucified at Place of Skull, then remain two and one-half days in the tomb, and on the third day ascend to the Father.

As this seed consumes its force every twenty-eight and one-half days and another (born first) comes out of the Solar Plexus (Bttillehem), we see why he was (is) a "Sacrifice for our sins"; also we see that, as this seed, taking on the Christ oil, is enabled to reach the pineal gland and cause it to vibrate at a rate that heals all manner of diseases — that the statement "The blood of Christ cleanseth from all sin" or deficiencies viz: falling short of substance is, literally true.

### PART III.

During the first 300 years of the Christian era all that has been above written was understood by the real Christians, and about the end of that time the persecution of these Essenes by the priesthood became so marked that they met in secret and always made the sign of the fish.

About the year 325, Constantine, the pagan Roman Emperor, a monster in human form, like Nero, and the beast of August, 1914, called the degenerate teachers of Christianity together at Nicea.

Constantine murdered his mother and boiled his wife in oil because they still held to the original doctrines of the Essenes. Constantine was told by the Priests of his time that there was no forgiveness for crimes such as his, except through a long series of incarnations; but the anti-Christ sought to concoct a plan by which he hoped to cheat the Cosmic law.

And so it came to pass, after months of wrangling and fighting over the writings of the primitive Christians who clothed the wonders of the human body in oriental imagery, that the council, sometimes by a bare majority vote, decided which of the manuscripts were the "Word of God" and which were not.

The very important point in the minds of those ignorant priests — whether or no an angel had wings — was decided in favor of wings by three majority. The minority contended that, as Jacob let down a ladder for angels to descend and ascend upon it was prima facie evidence that angels do not have wings.

Just think, for a moment, upon the colossal ignorance of these priests who did not know that Jacob in Hebrew means "heel catcher" or circle, and that ladder referred to the influence of the signs of the zodiac upon the earth; and as one sign rising every two hours forms a circle every twenty-four hours (the four and twenty Elders of Revelation) the outer stars of the rising suns (sons) "catching on" to the last sons (suns) of the sign ascending.

But now we come to the anti-Christ :

The council of Nicea, dominated by Constantine, voted that the symbols of the human body were persons; that Jesus was a certain historical man, a contention utterly and indubitably without foundation, in fact, and that all who believed (?) the story would be saved and forgiven here, and now. The idea appealed to the monster Constantine as an easy way out of his troubled mind and so the scheme of salvation by the actual blood of a real man or god was engrafted in the world.

Constantine and his dupes saw that the only way to perpetuate the infamy was to keep the world in ignorance of the operation of the Cosmic Law, so they changed "Times and seasons."

The date that they made the sun enter Aries was March 21st. Why? March 21st should be the first day of Aries, the head, April 19th should be the first day of Taurus, the neck, and so on through the twelve signs ; but these designing schemers knew that by thus suppressing the truth the people might come to realize what was meant by "The heavens declare the glory of God." Again: the moon, in its monthly round of 28<sup>^</sup> days enters the outer stars (or suns) of a constellation two and one-half days before it enters the central suns of the constellations that are known as the Signs of the Zodiac or the "Circle of Beasts." But even unto this day the whole anti-Christ world (so-called "Christian") except the astrologers, go by almanacs that make the moon enter a sign of the zodiac two and one-half days before it does enter it and thus perpetuate the lie of the pagan Constantine, the anti-

Christ.

Let me close with a deadly parallel :

Christ was a man born of a woman. "Lo ! I am with you always."  
He died, and He will come again. "He that believeth (believe means to do) SHALL never die."

We are Christians and expect to "The wages of sin is death."  
die and then be saved. "All that I do ye can do."  
"Be ye therefore perfect even as

Christ is greater than man, there pother is perfect."  
fore can save us. ..^now ye not that the Holy Ghost

Only Jesus was conceived by the Holy Ghost.  
^" Kingdom of Heaven is within  
you."

We must die in order to get into "The earth endureth forever."  
the "Kingdom." The earth will be "Thy will be done in earth as in  
destroyed. heaven."

"These SIGNS shall follow those  
I am a Christian. who believe in me : they shall lay  
hands on the sick and they shall re-cover."  
I am born of God because I be-  
lieve, or think, that a crucified saint, "He that is born of God will not  
or good man, will save me from sin. sin for his seed remainefh in him."

For more evidence that Jesus and Christ are in your flesh see 1st  
Epistle of John — 4th Chapter, 2nd and 3rd verses.

The Greek and Hebrew texts of our Scriptures plainly teach  
that Jesus and Christ, John and baptism, crucifixion and ascen-  
sion, the triumph of the Ego over the "Enemy death" are in the  
substance and potentialities of the body; and that these fluids  
can and will save the physical body if conserved and not consumed  
(or wasted) in sexual or animal desire.

All of whatever name or religious denomination who teach  
a contrary doctrine agree with Constantine who appeared in the  
"Latter days" of the Pure Christian Practice.

Who is the anti-Christ? Look at a world of ruins. Does  
a good tree bring forth evil fruit?

The so-called teachers of, and believers in Christianity be-  
lieve as Constantine and his priests, that Christ is "out in the

desert" of the Judean hills — out on Calvary. Do they ever look for the meaning of Calvary in Greek? Calvary means a skull, and Golgotha — the place of the skull, exactly where the seed is crucified. '^'

One-half of the combatants in the world's Armageddon have been praying, as Constantine prayed, "for God's help for Christ's sake." The other half pray to the same imaginary God and Christ out in "The desert" of their own ignorance for "peace and victory."

Return and come unto the God and Christ within you, oh! ye deluded ones, and the bugles will all sing truce along the iron front of war and the "Ransomed of the Lord will return to Zion with songs and everlasting joy upon their faces."

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